

*by Wed
6/26/04*

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: REINHARD EISENZOOPF Examiner #: 59778 Date: 5/26/04
 Art Unit: 2600 Phone Number 305-4711 Serial Number:
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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

*Mate
Firefox → Clint Eastwood
→ manufacturer
→ electrode
→ pulses*

*for
Tommy Chin*

*mind controlled computer
enabled?*

think control → the computer

*Academic Human
thought*

STAFF USE ONLY

Searcher: Pamela Reynolds

Searcher Phone #: 306-0235

Searcher Location: PC 2303

Date Searcher Picked Up: 5-26-04 12:00

Date Completed: 5-26-04 3:30

Searcher Prep & Review Time: 129

Clerical Prep Time: _____

Online Time: 81

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) _____

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family _____

Other _____

Vendors and cost where applicable

STN _____

Dialog _____

Questel/Orbit _____

Dr.Link _____

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Sequence Systems _____

WWW/Internet _____

Other (specify) 80 _____

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Set	Items	Description
S1	103	MINDDRIVE
S2	34	MINDSKIER OR MINDMUSIC OR MINDPOWERS OR MINDPINBALL OR MIND-DART
S3	297	(MIND OR THINKING OR THOUGHT) () (PULSE? OR SIGNAL? OR WAVES)
S4	17267	BRAINWAVES OR (BRAIN OR THOUGHT) (3N) (WAVE?? OR PULSE? OR SIGNAL?)
S5	958764	ELECTRIC? (3N) WAVES OR PATTERNS
S6	493473	(DIRECT? OR CONTROL? OR MANIPULAT? OR INSTRUCT? OR OPERAT?-) (3N) COMPUTER
S7	4703	FINGER? (3N) (SENSOR? OR DETECTOR?)
S8	92107	(BIOELECTRIC OR BIO() ELECTRIC OR ELECTRIC?) (3N) (PULSES OR - EMISSIONS OR SIGNAL?? OR IMPULSE?)
S9	19	S1(S)S7
S10	13	RD S9 (unique items)
S11	23	RD S2 (unique items)
S12	21	S11 NOT S10
S13	21	RD S12 (unique items)
S14	890	(S3 OR S4 OR S5 OR S8) (10N)S6
S15	0	S14(10N)S7
S16	9	S14(10N)FINGER?
S17	5	RD S16 (unique items)

1/3,K/1

DIALOG(R) File 256:SoftBase:Reviews,Companies&Prods.
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00099075 DOCUMENT TYPE: Review

PRODUCT NAMES: MindDrive (648043

TITLE: 'Mind-reading' software runs on standard PC

AUTHOR: Johnson, R Colin

SOURCE: Electronic Engineering Times, v921 p49(1) Sep 30, 1996

ISSN: 0192-1541

HOMEPAGE: <http://www.eet.com>

RECORD TYPE: Review

REVIEW TYPE: Product Analysis

GRADE: Product Analysis, No Rating

REVISION DATE: 20010630

PRODUCT NAMES: MindDrive (

Other 90 Percent Technologies' **MindDrive** is ostensibly a 'mind control' product that uses sensors to measure blood pressure, temperature, and pulse to control a PC's cursor. The **MindDrive** software automatically derives information from the data to decode a 'thought vocabulary' of six words. **MindDrive** improves on lie detectors and other biological interpretation standards, which require three seconds after a thought that triggered a response to register the response. **MindDrive** reads the biological signals mentioned immediately. Combinations of quick thought changes indicate a particular thought...

...rise in pressure and a drop in temperature, the derived emotion indicated could be anger. **MindDrive**'s designers call the combined signals composite neural activity (CNA), which measures amplitude, velocity (a...

...nature of the autonomic nervous system, which moves very quickly to suppress the changes that **MindDrive** works to recognize. **MindDrive**'s vendor says it provides real-time recognition of thoughts from inside a vocabulary of...

10/7,K/1 (Item 1 from file: 9)
DIALOG(R) File 9:Business & Industry(R)
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1462895 Supplier Number: 01462895 (THIS IS THE FULLTEXT)
Miramax brainstorms with tech outfit for plot twists
(Miramax Films and Other 90% Technologies Inc to jointly develop
computer-based entertainment software)
Hollywood Reporter, p 1+
April 11, 1996
WORD COUNT: 363

TEXT:
Viewers can alter story with brain waves

By Joseph Steuer

NEW YORK -- In what sounds like the script of a science-fiction thriller, Miramax Films has joined forces with a technology company, the Other 90% Technologies Inc., to produce films for computers that enable viewers to affect the plots with brain waves.

The Other 90% Technologies, based in San Rafael, Calif., has created a device called **MindDrive**. It uses a **finger sensor** to detect and convert users' thought patterns into signals that can control computers. The deal will enable Miramax to use MindDrive for their entertainment projects. In turn, Miramax will invest an undisclosed sum in the Other 90%, according to both companies.

Mark Gill, president of marketing at Miramax, said he hopes first to use the technology to create a six-to-eight-minute film for the Internet at the Miramax Web site this fall.

In essence, the film will be composed of several story lines instead of one, according to Gill, and the viewer, via the sensor, would determine which line or lines the story followed.

Miramax hopes to make feature-length films for the home market in 1997. The prospect for a MindDrive theatrical production is less likely "because the beauty and power of this system is how it gives an individual an input into his own entertainment."

"If you have 300 people in a theater wired up at once, that eliminates the positive aspects of individual control," Gill said. "At that point, all you have is a polling device," he said.

Ron Gordon, president of the Other 90% Technologies and creator of MindDrive, was president of Atari, Inc. in the mid-1970s and later headed his own company, Friends Amis Inc., which devised the first hand-held computer and the pocket language translator.

"There are so many applications for our MindDrive technology," said Gordon. "But using your own thoughts to affect the outcome of a film is very, very exciting."

MindDrive will be available to general consumers in June. The unit, which will cost \$150, features several applications, including games that allow users to ski down a mountain, compose music, conduct an orchestra or create art -- all with thoughts instead of joysticks or keyboards.

(USE FORMAT 7 OR 9 FOR FULLTEXT)

TEXT:

...waves.

The Other 90% Technologies, based in San Rafael, Calif., has created a device called **MindDrive**. It uses a **finger sensor** to detect and convert users' thought patterns into signals that can control computers.

The deal...

10/7,K/2 (Item 2 from file: 9)
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1278565 Supplier Number: 01278565 (THIS IS THE FULLTEXT)

Technology's new brainchild
(Other 90% Technologies to launch MindDrive--a hand-held cursor control device that responds to thought impulses)

Computer Reseller News, p 51

September 04, 1995

WORD COUNT: 710

TEXT:

BY FRED GARDNER

Boston

Hands-off computing -- once something of a "Jetsons" fantasy -- is close to becoming a reality.

For now, PC users are stuck with moving the cursor with arrow keys on the keyboard, a touchpad or a mouse. But a company called Other 90% Technologies Inc., Sausalito, Calif., will be offering an alternative as the new year comes around.

Both the company and the technology are the brainchild of Ron Gordon, an adventurous entrepreneur who, as chief operating officer, helped make Atari an attractive buyout for Warner Communications in 1976. He also developed pocket-sized electronic language translators and created the Electronic University Network, an online educational project.

Gordon's latest venture focuses on a product called MindDrive, which consists of a device that looks like a remote control and a sensor that wraps around the fingertip to read signals from the skin, or galvanic skin resistance. The signals are received by the small console, which sends commands to the PC.

Gordon explained that the sensor measures several different signals from the user, including heart rate and electrical energy that emanates from the left and right hemispheres of the brain.

Various thoughts produce physiological signals that can be measured through the skin in terms of output and strength. Because signals can be detected through the skin, the technology eliminates the need for electrodes attached to the scalp or any kind of headgear, Gordon noted.

"Thought-response technology will eventually enable people to use only their minds to accomplish what they want or need" with a computer, said

Gordon. "With the MindDrive, you do not need a keyboard, a joystick or a mouse to work with a computer; all you need are your thoughts," he added.

Gordon noted that the technology to measure the output and strength of brain and skin radiations has been available for a number of years but that MindDrive is the first to develop software to interpret the signals and translate them into PC-recognizable commands.

Additionally, MindDrive uses an artificial-intelligence program to recognize different types of thought patterns which can distinguish between positive and negative thoughts and between clear thinking and distracted thought. MindDrive is able to recognize and read the complex matrix of signals produced by various thoughts, Gordon explained.

Initially, Gordon plans an entertainment series of products but will also offer a Peak Performance Series, with programs to enhance work, school and sports performance.

Among the 14 applications being developed, there will be an educational program that helps students learn lessons and enhance memory skill simultaneously, an art program that enables one to draw and color on the screen with their thoughts.

Software for MindDrive is being developed by a worldwide team of 40 people, including a Ph.D.-level group located in Siberia, Russia, Gordon said.

With product to be available in January, Gordon expects pricing to range from \$100 to \$200.

VARs would like the technology to work. "I think [MindDrive] has a future. With system-integration convergence and everything, I look at my desk and there are just too many pieces -- keyboard, mouse and stuff cluttering it," said David Robinson, president of Digital Systems Management Inc., Lakeland, Fla. Anything that would reduce the number of components needed to run a computer would be a benefit, he said.

"I've seen other devices, such as helmets, that are too much. The technology must be unobtrusive, and if you have a ring that simply slips on your finger, that would be great if it really works," Robinson said. "The problem is that I've seen so many that don't work."

Other industry executives in the field are skeptical about MindDrive's novel approach. Richard Patton, president of Advance Neurotechnologies Inc., Colorado Springs, Colo., contends that Gordon's brainchild does not really access the brain's electromagnetic emanations, but only reads galvanic skin response, which would also access heartbeat rate and skin temperature.

"While brain signals may travel through the skin, how can you differentiate those signals through the finger?" Patton asks.

The Latest Mind Reader

MindDrive has device that looks like a remote control and sensor that wraps around fingertip .

Signals are received by the small console, which sends commands to the PC.

Sensor measures several signals, including heart rate and electrical energy from left and right hemispheres of the brain.

10/7,K/5 (Item 1 from file: 47)
DIALOG(R) File 47:Gale Group Magazine DB(TM)
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04691703 SUPPLIER NUMBER: 19129319 (THIS IS THE FULL TEXT)

Playing mind games. (MindDrive computer hardware)

Smith, Gina
Popular Science, v250, n1, p42(1)
Jan, 1997

TEXT:

It sounds like the information-age equivalent of a parlor trick: controlling a computer with nothing but your thoughts. No keyboard, no mouse, no remote, no kidding. But it isn't a trick. It's real - well, kinda. It's a "thought-processing" product called Mind-Drive, from a company called Other 90% Technologies, of Sausalito, California, and it could, well, change your mind about how we communicate with machines.

MindDrive consists of a remote control-like device that plugs into your PC's serial port, a **fingertip** skin **sensor**, and a DOS software program (remarkably behind the times for such a forward-thinking product). The sensor measures galvanic skin responses (GSR) like temperature, heart rate, and electrical impulses, and then relays this information to your PC via the control box. The software, in turn, interprets these signals as commands.

A penny for your thoughts? Well, it'll run you a bit more than that. The product costs about \$140 (more with additional software). But that's a very reasonable price when you consider all that went into it.

The company says it has worked for eight years on correlating combinations of some 80 skin responses with thoughts such as "left" and "up." And to what end? Playing games - at least for now. There's Mind Bowling, Mind Skiing, even Mind Pinball. It takes some practice, but I found the system actually does seem to work, at least intermittently. Sure, the games are extraordinarily crude, and you'll probably feel the urge to revert to your proven 10 percent and find the nearest mouse or keyboard. But hey, it's a beginning.

And that's the larger point that's easy to miss here. MindDrive may be gimmicky, but mind control is not a gimmick - or new. The U.S. government - secretly at first, then publicly - has been working for years on building fighter planes that can respond to the brain waves of pilots. (If you saw the movie Firefox, with Clint Eastwood, you get the idea.) Though the government officially says it quit funding the effort once the Cold War ended, it's hard to imagine that the military has completely sworn off such an intriguing idea.

Experts say it will likely be decades before scientists find a way to use brain waves to control objects consistently and accurately, but inexpensive GSR technology holds enormous promise in the short term. Health care organizations are reportedly evaluating the technology to help quadriplegics more easily control their electronic wheelchairs, and to help amputees control artificial limbs. Educators are testing GSR in labs to see how it could assist in the classroom. Imagine an educational program that monitored a child's attention span and focus. If the child wasn't adequately at-tuned to a certain lesson, the software might refuse to let the child move onto the next level.

Naturally, all this talk of thought-reading and attention-monitoring is bound to put ideas into the heads of people who support reading their employees' e-mail, random drug testing, and surprise call monitoring - which may not be very appealing prospects to many civil libertarians. Then again, as I sit here on a cross-country flight, a GSR device hooked up to an aircraft controller or a pilot sounds like a pretty decent idea. If the pilot's getting tired, shouldn't someone know?

Products like MindDrive may not be real solutions for a long time to

come. But they will be tangible, visible, commercial, and imagination-capturing examples of a technology that will surely influence - and with any luck, improve the quality of - our lives, or perhaps our children's lives. And whatever your opinion of MindDrive, that's a good thing.

So keep your keyboard, keep your mouse, and keep your joystick. And keep an open mind, as it were, about thought processing. Why, I can almost sense your feedback....

Gina Smith is the technology correspondent for "Good Morning America," and is co-host of The Discovery Channel's "Cyberlife." Send comments to PSLetters@aol.com

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MindDrive consists of a remote control-like device that plugs into your PC's serial port, a **fingertip skin sensor**, and a DOS software program (remarkably behind the times for such a forward-thinking product...).

10/7,K/6 (Item 2 from file: 47)

DIALOG(R) File 47:Gale Group Magazine DB(TM)
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04352252 SUPPLIER NUMBER: 17620637

Mind reading - fact of fiction? (Mind Drive finger sensor) (Product Announcement)

Windle, David
The Sunday Times, n8927, p3.11(1)
Oct 1, 1995

ABSTRACT: Ron Gordon will launch a **finger sensor** called **MindDrive**, which allows a user to operate a computer by thought. The sensor will be launched...

10/7,K/7 (Item 1 from file: 98)

DIALOG(R) File 98:General Sci Abs/Full-Text
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03287248 H.W. WILSON RECORD NUMBER: BGSI96037248

Mind control for PC's? I think not.

Manes, Stephen
New York Times (Late New York Edition) (N Y Times (Late N Y Ed)) (Oct. 1 '96) p. C7

LANGUAGE: English

COUNTRY OF PUBLICATION: United States

ABSTRACT: The claim that the new device **Minddrive** is "the first computer product operated by human thought" seems to be slightly exaggerated. The device supposedly allows the user to navigate a trail of bubbles through apertures on the screen using thought. The user's thoughts are communicated via a **finger sensor** that the manufacturers claim can distinguish between a physiological signal generated by a volitional thought and one generated by the autonomic system. However, 2 inanimate objects, a moistened wad of paper towel and a white table grape, proved just about as successful at moving the bubbles as the writer.

ABSTRACT: The claim that the new device **Minddrive** is "the first computer product operated by human thought" seems to be slightly exaggerated. The... ...through apertures on the screen using thought. The user's thoughts are communicated via a **finger sensor** that the manufacturers claim can

of The Other 90% Technologies, Inc. and inventor of the MindDrive. "With the MindDrive, you don't need a keyboard, a joystick or a mouse to work with a computer, all you need are your thoughts."

How the MindDrive Works

The MindDrive uses a sensor sleeve that simply fits onto your finger. A small control console receives signals from your thoughts, which are transmitted from your mind to the **finger sensor**. Then, the **MindDrive** interprets these various thought signals and directly moves the desired object or image on screen.

For years, it has been possible to measure the output and strength of these signals. The MindDrive, however, goes far beyond these basic measurements, by recognizing and reading the complex matrix of signals produced by our thoughts with a sophistication and precision that until now has been impossible.

Proprietary Artificial Intelligence software, developed by The Other 90% and built into the small MindDrive unit, interprets these signals and translates them into commands understood by the standard PC -- which directly moves the desired object or image on a video screen.

Consumer Uses for the MindDrive

The MindDrive is the first step toward establishing a wide range of thought-response consumer products for all ages. The MindDrive, along with a series of compelling, easy-to-use consumer-oriented applications, will be available in early 1996. It will have a retail price between \$100 and \$200, depending on how many software programs are included with the MindDrive.

Software applications will be divided into three categories:

- o An Entertainment Series -- thought controlled video games, toys and games.
- o An Education Series -- training memory concentration and creativity skills.
- o A Peak Performance Series -- programs to enhance work, school and sports performance.

Fourteen initial application programs are projected to be introduced with the MindDrive and will include: a downhill ski game where the player just thinks the turns and movement down the slope; an educational program that helps students learn new lessons and enhance their memory skills at the same time; and an art mind program which enables users to draw and color on the screen with their thoughts. The Other 90% is currently developing MindDrive applications with a world-wide team of 40 people, including a Ph.D. level programming group located in Siberia, Russia.

About The Other 90% Technologies, Inc.

The MindDrive was conceived by Ron Gordon in the mid-1970s, when he was heading Atari, Inc. Gordon is widely acknowledged for his ability to transform advanced, expensive technologies into inexpensive, easy-to-use consumer products, such as the pocket language translator and the first hand-held computer. Following several high-tech business successes, Gordon returned to his vision of a thought-controlled interface in 1988 and founded The Other 90%, based in Sausalito, Calif. The Other 90% Technologies, Inc., is a privately-held firm dedicated to delivering the ability to use just the mind to accomplish whatever people want or need.

CONTACT: Access Public Relations

Mark Smotroff or Garth Bradley, 415/904-7070 ext. 270/283

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... control console receives signals from your thoughts, which are transmitted from your mind to the **finger sensor**. Then, the **MindDrive** interprets these various thought signals and directly moves the desired object or image on screen...

Inc. Subscription: \$397 per year as of 3/95. Published 26 times per year. Contact Phillips Business Information, Inc., 1201 Seven Locks Road, Potomac, MD 20854. Phone (301) 340-1520. Fax (301) 424-4297.
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The **MindDrive** uses a sensor sleeve that fits onto human fingers. A small control console receives signals from human thoughts, which are transmitted from the human mind to the **finger sensor**. Then the **MindDrive** interprets these various thought signals and directly moves the desired object or image on screen...
?

13/7/1 (Item 1 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
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1710232 Supplier Number: 01710232 (THIS IS THE FULLTEXT)
CES - Thoughts Drive MindDrive Applications
(The Other 90% Technologies Inc's MindDrive computer games let players control action with brainwaves; primary users men in the 30 to 55 age group)
Newsbytes News Network, p N/A
January 10, 1997
WORD COUNT: 348

TEXT:

LAS VEGAS, NEVADA, U.S.A., 1997 JAN 10 (NB) -- Attendees at the Winter Consumer Electronics show are flocking to the booth of The Other 90% Technologies Inc. of San Rafael, California, to see if they can focus their thoughts enough to control a computer. The company's MindDrive technology measures galvanic changes of a user's index finger to correlate thought to control a cursor or object on a computer.

At the booth, attendees are carefully instructed to not move their index finger, but rather allow their minds to control the action on the screen. Most of the willing attendees got some control in a matter of minutes. "It actually takes some practice to learn how to do this really well," said Michael Bergman, president of New Generation Marketing. "We have figured as way to read galvanic skin response, heart rate and left and right brain activity. This means a user really can control what happens on a computer screen with their thoughts."

MindDrive technology is the brainchild of Ron Gordon, a co-founder of Atari. About his latest endeavors, he said, "Until now, we have had to process all our thoughts and actions through our hands, words and the machines we build. The MindDrive is the first step that could lead directly to using our minds to control actions and activities outside of our own bodies."

MindDrive, selling at \$149, is currently available at most computer retail stores. Early applications focus on entertainment titles and include MindFlight, MindSkier, MindMusic, MindArt, Get Smart, Fib, PinballMind, MindGames and The Zone. Titles vary in price from \$25 to \$40.

parts of English and makes them fun. Kids play arcade-style games where they have to whack incorrectly spelled words when they pop up, and they really have to learn to succeed at the games."

Disney Interactive, which started out with educational titles, then switched to kids' activities, is veering back to the educational approach, adding counting and matching games with several levels of difficulty to its smash hit Toy Story.

Upcoming titles, particularly this fall's The Hunchback of Notre Dame, will have even more learning value, according to vp marketing, edutainment Carolyn O'Keefe. "We are continuing to learn what the customer wants, and that seems to be more educational content," she said. "We are working with educational consultants to deliver good educational value and good value, period. No one wants to spend \$35 for a product and have it just sit on the shelf. Our research shows that products with a rich, varied and challenging content get used more often and for a longer time. And that makes consumers feel good about buying Disney."

Hunchback, due in October, will feature five challenging learning games (including one that allows kids to compose their own song, then choreograph it with dancing gargoyles) as well as a 360 degree section that allows kids to explore France during the time period.

"Even the clickables have an educational aspect," O'Keefe said. For instance, a gypsy tightrope walker will fall unless the child balances the right amount of chicken on his balancing pole.

"The complexity and interactivity have been increased throughout the game," O'Keefe said. "We think Hunchback, because of its subject matter, will skew a little higher than previous titles, and the educational content has to appeal to and challenge these older kids."

Creative Wonders, the joint venture between Electronic Arts and VTech, the electronics company that single-handedly created a niche in precomputer learning toys for kids, is moving into the computer market with software and kid-oriented peripherals. According to vp Carol Seitz, the company will release six PC titles licensed from Encyclopedia Britannica, which until now has kept its content off retail shelves. The titles will take a Time-Life Books approach, compiling EB material by subject with added interactive game and adventure play.

Titles include Inventions of Mention, in which kids will access information about important inventors to help them catch up with their dog, who is chasing a transcontinental frisbee. For instance, when stymied by the Grand Canyon, the player can get useful advice from the inventor of the elevator or of the hot air balloon.

Others under development include Take Flight, in which kids build and fly their own test aircraft, a space adventure called Stories in the Sky, Ancient Civilizations and a language title called Beyond Words.

The company has also introduced a series for very young PC users called PC Talker, which includes an in-pack doll of a major character with each software title. The "doll" is actually a third speaker that broadcasts only the lines of its on-screen character, adding concrete play value to the computing experience. According to Seitz, the PC Talker line will include four titles based on classic fairy tales like Little Red Riding Hood and Jack and the Beanstalk.

For slightly older kids, VTech will introduce Smart Keys, a kid's keyboard (with a built-in splitter so that it can be installed once, then used anytime with the flip of a switch) that makes learning the alphabet fun (in

part because the keys are in alphabetical order, not Qwerty) and includes a piano keyboard that teaches kids the rudiments of playing an instrument. They keyboard also includes eight directional keys, making on-screen navigation easier for youngsters. Most important, the durable \$79 keyboard is virtually kid-proof and keeps jelly-stained hands off mom and dad's keyboard.

Packard Bell Interactive started out with budget multimedia storybooks, but is now firmly in the educational market with its A+ Learning series. Dinosaur in the Garden, the latest in the line, includes a read-along book in which various friendly but clumsy dinosaurs wreak havoc in a kid's house while the parents are away. But beyond the read-along, Packard Bell has packed in a spelling bee (with an on-screen keyboard to teach typing skills) that teaches spelling, pronunciation and vocabulary. Hidden word games, jigsaw puzzles and matching games all have educational aspects, and on-line help lets kids learn more about words and import new words into the spelling bee feature.

Each dinosaur has its own related screen that teaches kids more about each individual lizard, with instant access provided by clicking on the dinosaur.

Palladium Interactive takes on physics and astronomy with Nine Worlds with Patrick Stewart, an exploration of the solar system with the popular "Star Trek: The Next Generation" star. Kids can visit each planet or travel through time to discover how humans viewed the heavens at various times and in various cultures around the world.

If a kid finds something interesting, a NetProbe quickly reaches out on the Internet to retrieve more information, and the Nine Worlds Web site offers direct links to NASA, the online newsletter Galactic Gazette and even Star Trek's home page.

For older kids, particularly those thinking about college careers, the Princeton Review is now packaging its achievement test preparation books in multimedia form. In particular, the Inside the SAT package offers a fun, interactive way to prepare for the test that can make or break a college career, with built-in tracking so that parents can help direct their kids' review activities to the areas that need most help. Each copy includes a certificate good for 30 minutes of over-the-phone help from one of the Princeton Review's tutors. Most recently, the company introduced a series of titles to help kids perform better in middle and high schools, with drilling and mock tests in chemistry and other subjects.

Planet Earth: Explore the Worlds Within teaches high school age kids about the various regions of the world, combining an atlas, geographic database, information on ecology and demographics, and much more. MacMillan Digital USA and its partner, the German entertainment giant Bertelsmann, spent \$12 million developing this title, which contains the raw information of a very deep encyclopedia along with cultural, religious and social information.

Discovery Multimedia, one of the leaders in educational software (most derived from its Discovery Channel documentaries), has taken a kid-friendly approach to American history, SkyTrip America.

Guided by celebrities like basketball star Chris Webber, tennis pro Michael Chang and magician/Comedy Central spokesman Penn Gillette, kids can visit any era or region of the United States from 30,000 B.C. to the present, learning about everything from Wyatt Earp to the last Presidential election, and they can stop off on the way to play a series of fun games that give players a taste of life during stages of the development of the

country.

Characters like The Incredible Hulk, Wolverine and Spider-Man hardly leap to mind as educational icons, but Brighter Child Interactive plans to bring a series of mathematics and geography titles starring the Marvel super-heroes and villains to market starting later this year.

Similarly, Saban's Mighty Morphin Power Rangers are transforming from edutainment titles like Comic Book Maker to hard-core educational programs that challenge kids in mathematics, spelling, grammar and other elementary school fundamentals.

Another fun approach to learning comes from Davidson's Maurice Ashley Teaches Chess. Ashley has been dubbed the John Madden of chess, and his informal, infectious teaching style is ideal for getting younger kids interested in the game.

One of the most interesting approaches to educational software comes from MindDrive, a new \$150 technology that allows users to maneuver through software using only their minds. A finger sleeve picks up signals from the mind and transmits them to special software titles, which react accordingly. MindArts allows kids to draw and create. Get Smart enhances memory, creativity and concentration. And **MindMusic** allows users to compose and conduct original music. MindDrive is a product of The Other 90% Technologies.

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13/7/3 (Item 3 from file: 9)
DIALOG(R) File 9:Business & Industry(R)
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1366419 Supplier Number: 01366419
The Other 90%: A future based on brainpower
(The Other 90% will introduce MindDrive in 1996, which will allow users to control computers with their brains)
USA Today, v 14, n 71, p 3B
December 26, 1995

ABSTRACT:

The Other 90% will introduce MindDrive in 1996, which will allow users to control computers with their brains. A small sensor will attach to a user's finger and detect bio-electric signals. The sensor is attached to the computer. The article mentions that the device was tested with users from the crowd. The games **MindSkier**, **MindMusic**, **MindArt**, Mindflight, and Get Smart will be bundled with the device. However, company founder Ron Gordon said that currently, the device is only effective for games, but he expects \$40 mil of revenue in 1996.

13/7/4 (Item 1 from file: 15)
DIALOG(R) File 15:ABI/Inform(R)
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01309133 99-58529
USE FORMAT 9 FOR FULL TEXT
'Mind-reading' software runs on standard PC

ABSTRACT: The Other 90% Technologies Inc. claims to have mastered mind control of computer functions in its first product. The \$140-product, announced in 1995, uses sensors to take standard measurements of blood

pressure, temperature and pulse. The company's MindDrive software then automatically extrapolates from that data to decode a thought vocabulary of 6 words.

Johnson, R Colin
Electronic Engineering Times n921 PP: 49 Sep 30, 1996 ISSN: 0192-1541
JRNL CODE: ELET
DOC TYPE: Journal article LANGUAGE: English LENGTH: 1 Pages
WORD COUNT: 467

13/7/5 (Item 2 from file: 15)

DIALOG(R) File 15:ABI/Inform(R)
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01230872 98-80267

USE FORMAT 9 FOR FULL TEXT

The next toy story: Kids' educational software is hot

ABSTRACT: The children's educational software market is growing up, with ever more sophisticated graphics, better and more subtle content and emphasis on plot and character that helps the learning go down more easily. Wanderlust is just one of many relative newcomers to the category who are introducing titles with extremely valuable educational content wedded to state-of-the-art game play to produce products that are irresistible to parents and kids alike. DreamWorks Interactive, a joint venture between the DreamWorks entertainment company and Microsoft, is working on Cooper's Cliffhangers, a "grammatical adventure" that requires kids to pass various grammar tests to move on to new levels and Now You're Cooking an interactive cooking game that teaches the very young how to cook and compile recipes.

Hisey, Pete
Discount Store News v35n10 PP: 23, 26 May 20, 1996 ISSN: 0012-3587
JRNL CODE: DSN
DOC TYPE: Journal article LANGUAGE: English LENGTH: 2 Pages
WORD COUNT: 1619

13/7/6 (Item 1 from file: 16)

DIALOG(R) File 16:Gale Group PROMT(R)
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04774613 Supplier Number: 47028084 (THIS IS THE FULLTEXT)

CES - Thoughts Drive MindDrive Applications 01/10/97

Newsbytes, pN/A

Jan 10, 1997

TEXT:

LAS VEGAS, NEVADA, U.S.A., 1997 JAN 10 (NB) -- Attendees at the Winter Consumer Electronics show are flocking to the booth of The Other 90% Technologies Inc. of San Rafael, California, to see if they can focus their thoughts enough to control a computer. The company's MindDrive technology measures galvanic changes of a user's index finger to correlate thought to control a cursor or object on a computer.

At the booth, attendees are carefully instructed to not move their index finger, but rather allow their minds to control the action on the screen. Most of the willing attendees got some control in a matter of minutes.

"It actually takes some practice to learn how to do this really well," said Michael Bergman, president of New Generation Marketing. "We have figured as way to read galvanic skin response, heart rate and left and

right brain activity. This means a user really can control what happens on a computer screen with their thoughts."

MindDrive technology is the brainchild of Ron Gordon, a co-founder of Atari. About his latest endeavors, he said, "Until now, we have had to process all our thoughts and actions through our hands, words and the machines we build. The MindDrive is the first step that could lead directly to using our minds to control actions and activities outside of our own bodies."

MindDrive, selling at \$149, is currently available at most computer retail stores. Early applications focus on entertainment titles and include MindFlight, **MindSkier**, **MindMusic**, **MindArt**, Get Smart, Fib, PinballMind, MindGames and The Zone. Titles vary in price from \$25 to \$40.

"When people come by and see our exhibit, they at first think it is just a game, but as they experiment they get very involved and realize that MindDrive is all about getting into their own minds," added Bergman.

Continuing he said, "You might think we sell mostly to kids who want to play games. That is not the case. Most of our users are men in the ages of 30 to 55. These are people who are into the future and new technologies."

(19970110/Press Contact: Anne Magor 415-904-7070, Access Communications, tel 415-904-7070; Reported by Newsbytes News Network:
<http://www.newsbytes.com/MINDDRIVE970110/PHOTO>)

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13/7/7 (Item 2 from file: 16)
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04590952 Supplier Number: 46749859 (THIS IS THE FULLTEXT)

'Mind-reading' software runs on standard PC
Electronic Engineering Times, p49
Sept 30, 1996

TEXT:

San Rafael, Calif. - The Other 90% Technologies Inc.-brainchild of former Atari head Ron Gordon-claims to have mastered "mind control" of computer functions in its first product. The \$140 product, announced more than a year ago, uses sensors to take standard measurements of blood pressure, temperature and pulse; the company's MindDrive software then automatically extrapolates from that data to decode a "thought vocabulary" of six words.

Lie detectors and other traditional approaches to interpreting biological signals to deduce a subject's mental state cannot be easily automated, because the data interpretation requires human experts and because the signals being read-galvanic skin response, in the case of the typical lie detector-are not registered until about 3 seconds after the thought that triggered the response occurs.

MindDrive reads signals that track thoughts without delay:namely, blood pressure, pulse and temperature. Combinations of instantaneous changes in those signals are indicative of a particular thought. For instance, a rising pulse rate whose phase is slightly ahead of a rise in pressure and a drop in temperature might indicate "anger."

MindDrive's creators call those combined signals composite neural activity. CNA measures amplitude, velocity (defined as a signal's rate of change) and attenuation, as well as the asymmetrical relationships among signals in both phase and magnitude.

Autonomic response

Previous attempts to read thoughts by tracking real-time signals have been foiled by the autonomic nervous system, which quickly moves to quell the very changes that MindDrive works to recognize. The Other 90% devised a dynamic filter that is said to remove the "noise" of the compensatory

actions of the autonomic nervous system, leaving behind only the effects of conscious, volitional thoughts.

As an analysis-software product that runs on a PC, MindDrive is claimed to provide real-time recognition of thoughts from within a vocabulary of six words. Six thought patterns are sufficient to control the on-screen cursor by decoding for the left, right, up, down and stop commands. Thoughts can also be used to activate other on-screen controls, much as a mouse and keyboard are typically used.

The Other 90% is offering the initial product as a turnkey package with 10 bundled mind-enabled game titles to demonstrate the capabilities of its six-word vocabulary. OEMs should be interested in the future of the technology, whose capability in the lab has already been extended beyond six words.

One of the bundled games, called Fib, allows players to quiz each other to guess what the other is thinking, with MindDrive serving the lie-detector function. **MindMusic** lets the participant compose and conduct music via mood control. MindDoodle has a structured mode that lets the user mentally control an on-screen paint brush.

MindSkier directs a skier left and right during a downhill run; MindBowling lets the user "aim" a bowling ball down a 3-D lane. Other games include PinballMind and MindFlight.

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DIALOG(R) File 16:Gale Group PROMT(R)

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04579137 Supplier Number: 46731651 (THIS IS THE FULLTEXT)

NOTEBOOK--"Mind control

Consumer Electronics, v36, n39, pN/A

Sept 23, 1996

TEXT:

"Mind control" operating PCs is claimed by product developed by The Other 90%. Company says technology eventually will be applied to various CE devices. Developed over 7 years, MindDrive (\$149) consists of small sensor sleeve that fits onto any finger and microcontroller that plugs into PC. Sensor reads such factors as skin temperature, moisture and electromagnetic levels and transmits them to PC, allowing playing of games such as MindFlight or **MindSkier** or drawing of pictures with **MindArt** (titles \$24-\$39). MindDrive will be available at CompuUSA, Computer City, Electronic Boutique, Frys, Sun TV, others. The Other 90% Pres. Ron Gordon, ex-Atari head, said company expects to sell 100,000 in U.S. this year, expand overseas next year, with Japan likely first target. He said company is looking at ways to use "thought control" to operate videogame consoles and TV remote controls. MindDrive currently is made at undisclosed Cal. factory, but Gordon says company will move production offshore when sales increase.

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13/7/9 (Item 1 from file: 47)

DIALOG(R) File 47:Gale Group Magazine DB(TM)

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04725563 SUPPLIER NUMBER: 18959052 (THIS IS THE FULL TEXT)

101 holiday gift ideas. (hardware and software) (Buyers Guide)

Ryan, Michael E.

PC Magazine, v15, n22, p349(13)

Dec 17, 1996

TEXT:

THE HOLIDAY SEASON IS UPON US, WHICH means that it must be time for PC Magazine's third annual holiday gift guide. This year instead of giving you a rundown of the best products of the past year, we've peered into our crystal ball to bring you previews of 96 upcoming software releases. In addition, we give you brief looks at 5 nifty gadgets -- for a total of 101 products, all of which should be on the shelves in time for the holidays. While there is a chance that some of the software titles included in this story won't ship on time, we're confident that the vast majority will.

So whether you're interested in games, productivity titles, or other products for the leisure side of personal computing, we've got plenty of gift ideas to help you wrap up your shopping for the PC users on your list.

ACTION

Amok (\$50; GT Interactive, 800-610-4847, www.gtinteractive.com).

Robot games are al the rage this holiday season, and Amok is one of the cooler ones. You play a mercenary whose job t is to start wars both on land and under the waves in your Slambird where they get these names, we simply don't know). The graphics are impressive, and the action is fun.

DeathDrome (\$55; Viacom New Media, 800-469-2539, www.viacomnewmedia.com). In this first-person game, you play a prisoner who must fight for your freedom as entertainment for the masses (the "no cruel and unusual punishment" idea having gone by the boards). You pick a scooterlike vehicle and zoom around futuristic arenas, knocking off your fellow inmates before your time runs out,

Diablo (\$50; Blizzard Entertainment, 800-953-7669, www.blizzard.com). This fantasy role-playing action game could very well be one of the hottest releases of the season. With spectacular graphics and special effects, fast-paced dungeon-crawling action, random level generation, and free internet-based multiplayer support, Diablo has all the makings of a classic. Make it a point to get a look at this one.

G-Nome (\$50; 7th Level, 800-884-8863, www.7thlevel.com). Human pilots in huge robots lumbering across the battlefield. Sound familiar? Unlike other mech games, this one lets you eject out of your mech and run around the battlefield on foot. You can even commandeer other mechs. Also, G-Nome's graphics are very nice, easily equal to the state of the art.

Hunter Hunted (\$55; Sierra On-Line, 800-757-7707, www.sierra.com). Hunter Hunted is similar to levels-and-ladders games like Donkey Kong, except that this gorilla packs a gun. This gritty, fast-paced thriller keeps you on your toes as you run around the game's 2-D levels, picking up weapons and shooting the bad guys. Hunter Hunted also offers good multiplayer support, including a split-screen option.

HyperBlade (\$50; Activision, 800-477-3650, www.activision.com). HyperBlade is like a futuristic, ultra-violent cross between hockey and jai alai. The object is to bring your ball down the 3-D arena and fire it into the goal before you get bowled over by your opponents. The playing surface is littered with dangerous, potentially lethal obstacles, and the opposing team is always out for your head. HyperBlade has nice high-resolution graphics and lots of fast action.

Interstate 76 (\$50; Activision, 800-477-3650, www.activision.com). Imagine a world where the gas crisis never ended and America's roads are about as safe as those in the movie MadMax. Interstate 76 is like MechWarrior 2 with muscle cars, and it grooves to the funkiest soundtrack we've ever heard in a PC game. You play Groove Champion, out to avenge the death of your car vigilante sister, Your hip comrade (who sounds like Samuel L. Jackson's character in Pulp Fiction) will help out as you go on and off the road, shooting up bad guys and blowing up obstacles.

Necrodome (\$45; Strategic Simulations Inc., 800-601-7528, www.sessionline.com). As in DeathDrome, you tool around arenas in a big, powerful weapon of a car laying waste to your enemies. You can also leave

kids trace their favorite pictures.

Microsoft SideWinder Game Pad (\$40; Microsoft Corp., 800-426-9400, www.microsoft.com). This programmable game controller offers eight buttons, an eight-direction thumb pad, and the Game Device Profiler software, which lets you assign special commands to each button for your favorite games. Also, the SideWinder Game Pad has a unique pass-through port that lets you daisy-chain up to four pads together on a single PC.

MindDrive (\$150; The Other 90% Technologies, 800-706-0456, www.other90.com). A device that lets you control your PC with your mind? Yes, that's right. This little device fits onto your finger and reads bioelectric signals through your skin, transmitting the data to any MindDrive-enabled application (a game called **MindSkier** is included with the product).

SurfMan (\$100; Logitech, 800-231-7717, www.logitech.com). With this sleek wireless device, you can sit back and surf the Internet as comfortably as you surf your cable channels. SurfMan includes a little thumb-operated trackball and three buttons, which can provide one-click access to many Internet-specific commands. This product could spawn a whole slew of "mouse potatoes."

AGES 3 TO 8

Fisher-Price Learning in Toyland (\$20; Davidson & Associates, 800-545-7677, www.davd.com). Learning in Toyland is a playland of six games, all of which combine good sound and graphics to entertain and educate. Besides learning how to match shapes and colors and how to follow instructions, kids can print out many of their creations for a place of honor on the refrigerator.

The Gigglebone Gang World Tour (\$30; Headbone Interactive, 800-267-4709, www.headbone.com) A visually impressive title, The Gigglebone Gang World Tour lets kids learn about life in ten different countries. In each country, the Gang's five members will teach kids a variety of local facts, including a fable and a traditional game.

Grandma Ollie's Morphabet Soup (\$30; Kinderactive, 888-438-6543, www.kindernet.com). Grandma Ollie is in the kitchen and cooking up seven educational meals, including Amazing Alphabet Soup and Multiple Meanings Moussaka. Based on a real-life grandmother and teacher, the character in this CD-ROM teaches alphabet skills, spelling, vocabulary, and early reading skills.

JumpStart Kindergarten Reading (\$55; Knowledge Adventure, 800-542-4240, www.adventure.com). Mr. Hopsalot takes your pre-schooler on visits to six of his relatives in an attempt to find clues that lead to a treasure in his carrot patch. The clues are won by playing games that teach basic reading skills, like distinguishing vowels from consonants.

Just Me and My Mom (\$40; GT Interactive, 800-610-4847, www.gtinteractive.com). Just Me and My Mom is another Little Critter story by Mercer Mayer. In this wonderfully engaging title, Little Critter, together with his funny pet frog and his mom, spends a day in Critter City visiting the aquarium, the Museum of Natural History, and other places (and each screen is full of clickable objects).

Kidsongs Musical Mystery (\$30; Terraglyph Interactive, 800-929-9844, www.terraglyph.com). Another kids' game based on a TV show, Kidsongs Musical Mystery challenges players to solve the mystery of Professor Major Chord and his Harmonious Orchestra's many missing musical instruments. Kids are able to explore eight musical lands and three secret words in this vibrant title.

Mega Math Blaster (\$45; Davidson & Associates, 800-545-7677, www.davd.com). An updated version of an educational classic, Mega Math Blaster is a fun and funny comic adventure in which you play math games to rescue Spot, Blaster's sidekick, from the evil villain, Brain Drainer. With 42 skill levels and more than 50,000 math problems, you should not have to worry about repetition with this title; this is a game that will keep up with your child's developing math skills.

Language, 800-752-1767. www.transparent.com). This Spanish-language reference CD-ROM can be a valuable resource for anyone who wants to maintain or enhance a knowledge of the language. Users can choose to translate words from Spanish to English (or vice versa), conjugate verbs, or play games that test Spanish proficiency. The title is geared toward those with at least a working knowledge of the language and works especially well in conjunction with other Transparent Language titles.

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DIALOG(R) File 47:Gale Group Magazine DB(TM)
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04624007 SUPPLIER NUMBER: 18843092 (THIS IS THE FULL TEXT)

Invisible input devices: experiments in thought-controlled computing.
(concept of using brain-waves, other biometric elements for computer I/O)
(Technology Information)

Olshan, Jeremy
PC Magazine, v15, n20, p36(1)
Nov 19, 1996

TEXT:

Most people find having a conversation with a friend easier than manipulating data within a Microsoft Excel spreadsheet. That's why research into human/computer interaction seeks to make communication with a Pentium more like chatting with a pal.

People communicate using an intricate combination of vocalizations, gestures, and touch; having to use a keyboard and mouse is an obstacle to natural communication. The ideal input device, then, would be one you don't even know is there. To that end, products are being developed that recognize various types of input--even your thoughts.

Scientists at Carnegie Mellon's Interactive Systems Labs are experimenting with multi-modal interfaces, which incorporate several different types of input simultaneously. Such devices might monitor speech, movement, and the position of a user's eyes. The key here is that you choose the most efficient input for a particular task. For example, you might say, "Schedule a meeting," while pointing to a date on the calendar to mark the start and finish times.

But as Professor Alex Waibel notes, in order to succeed, "a multi-modal interface must be both flawless and robust." Anyone who has ever tried using a voice recognition system might liken the frustration of the experience to trying to give directions to a four-year-old.

Microsoft's Hardware group has also been working on developing several new interfaces. When asked about the viability of handwriting recognition today, Rick Thompson, vice president of the group, explained that attempts to produce a consumer product with current technology often end in a "glorified Etch-a-Sketch." But now, developers are investigating video games--because of the relative simplicity required for control--as a gateway into the market for new interfaces.

Microsoft recently acquired EXOS, developer of the force-feedback joystick. This joystick provides a tactile interface that lets gamers feel the bumps and vibrations in a road, the recoil of a pistol, or a crash landing. As force-feedback technology--which was originally created for doctors and surgeons--improves, it could become useful in any situation where touch is more useful than sight or sound.

Perception Systems has developed the ZON, an input device that uses motion-sensor technology to recognize gesture commands. Although the ZON will first appear as a gaming device, the company foresees applications extending from sports instruction to assistance for the handicapped.

The MindDrive tethers the rest of your brain to a computer. Created by

The Other 90% Technologies, the MindDrive is designed to control action on the screen with only your thoughts. Fueled by bioelectric signals in your skin, you can think your way down the slopes in **MindSkier** or experience a spare from the viewpoint of the ball in **MindBowling**. These games are fun, but the real potential for this technology has yet to be realized.

According to Ron Gordon, president and founder of The Other 90%, the MindDrive is already capable of distinguishing six words as they are thought. But it will be many years before the MindDrive is viable for a spin around the block, let alone the navigation of wheelchairs and fighter planes.

Although the interfaces are still too novel and cumbersome to provide a seamless dialogue between human and computer, the advances of the next decade may make possible the truly invisible input device.

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06465037 SUPPLIER NUMBER: 99697827
The AAAI-2002 Robot Exhibition. (Articles).
Horswill, Ian
AI Magazine, 24, 1, 73(10)
Spring, 2003

TEXT:

The AAAI Robot Exhibition offers robotics researchers a venue for live demonstrations of their current projects and gives others an opportunity to see a selection of current research work. At the 2002 exhibition in Edmonton, Alberta, Canada, 12 robots were demonstrated by a variety of laboratories and institutions. Many of these systems were works in progress, providing the audience an opportunity to see snapshots of research programs in midphase. Contributors ranged from independent undergraduate projects to large multilab efforts.

Despite the range of robots and researchers, there were nonetheless a number of recurring themes worth noting. Robotic systems for urban search and rescue (USAR), an area of growing interest for several years, have continued to develop. Human-robot interaction is another dominant theme as researchers strive to build systems that can truly cooperate with humans. Multimodule systems, either in the form of robots that can reconfigure themselves by rearranging their own components or in distributed robot teams where the components are physically separate autonomous agents, are another popular area of research. Not surprisingly, many human-robot systems and multirobot systems are designed for USAR and other search tasks.

Another cluster of related themes we see is the use of robots in contexts such as hobbies, education, and entertainment, where in some sense the real goal of the system--whether the robot "realizes" it or not--is to make a change in the user, not in the world. Robot hardware design is of course also a common theme. Custom research robots are often dependent on the availability of cheap, versatile components that can be plugged together relatively easily without large investments in design or fabrication. Mainstays of the field, such as Legos, model-airplane servomotors, and the Massachusetts Institute of Technology (MIT) HANDY BOARD, are being augmented by new components, such as palmtop computers and the Carnegie Mellon University (CMU) CMUCAM, that provide considerably more sensing and computation than were previously available.

The remainder of this article provides, in alphabetical order, brief discussions of each of the entries based on text provided by their respective designers. The reader should assume that anything smart in the

between team members to match changing task requirements with changing robot capabilities. The Kansas State University robots were exhibited by Eric Matson.

JUNIOR

The Idaho National Engineering and Environmental Laboratory (INEEL), represented by David Bruemmer, demonstrated a robot for urban search and rescue (USAR) that can adjust its level of autonomy on the fly, leveraging its own intrinsic intelligence to exhibit levels of control from teleoperation to full autonomy. The robot is part of a project to develop new and innovative tools for synergistic interaction between autonomous robots and human operators and supervisors (figure 7).

(FIGURE 7 OMITTED)

The INEEL robot could actively protect itself and the environment as it navigated through the USAR environment. In addition, the robot continuously assessed and adapted to changes in its own perceptual capabilities. The robot's interface supported mixed-initiative interaction between the operator and human. It displays an abstracted representation of the robot's experience and exploits sensor suites and fusion algorithms for sensing, interpreting, and understanding environmental features.

INEEL's approach was motivated by operational experience working with robots in hazardous environments. They found that both teleoperated and fully autonomous approaches had weaknesses. Their approach is to use an architecture for dynamic autonomy control that permits the user to move between the two extremes. Sliding autonomy, as demonstrated in Edmonton in 2002, supports changing communication, cognitive, perceptual, and action capabilities of the user and robot.

For example, the robot's camera, which supports controllable pan, tilt, and zoom, can remotely be controlled by the user for inspection or can autonomously track people and objects. The robot can also autonomously follow a human even at high speeds. The robot is also equipped with a forward-looking infrared (FLIR) camera whose output can be combined with the output of the CCD camera to distinguish between living and dead people (or living and dead mannequins, in this case).

The robot also has a wide variety of ranging (sonar and laser) and proximity (infrared, bump switches) sensors to help the robot maneuver though terrain without colliding with objects, bumping its "head," falling down staircases, and so on. These sensors provide a field of protection around the robot and allow the operator to command the robot with full confidence.

MINDART

The Minnesota Distributed Autonomous Robot Team (MINDART), another distributed entry, is a group of simple and low-cost (Lego-based) robots used at the University of Minnesota Computer Science and Engineering Department for research into reactive control strategies (figure 8). Minnesota researchers Paul E. Rybski, Maria Gini, and colleagues are interested in studying how environmental and control factors affect the performance of a homogeneous multirobot team doing a search-and-retrieval task. They have examined several factors affecting team performance. One factor is the distribution of targets, ranging from having a uniform distribution to having all the targets clustered together into one or two small clumps. Another factor they are examining is the size of the team (varying from one to five robots). Finally, the type of search strategy is varied between a completely reactive method to a directed search method that uses the robot's ability to localize itself.

(FIGURE 8 OMITTED)

The robots use CMUCAMS to localize themselves with respect to colored landmarks placed in the environment. By calculating the bearings of three colinear landmarks, the MINDART can resolve their global x, y, and (phi) coordinates in roughly five seconds. Alternatively, if the landmarks are not colinear, the MINDART can use an image-based homing algorithm to iteratively reduce the error between their current position and desired

=> d 17 1-

1. 5,672,107, Sep. 30, 1997, Integral video game and cardio-waveform display; Henry M. Clayman, 463/36; 482/901 :IMAGE AVAILABLE:
2. 5,666,138, Sep. 9, 1997, Interface control; Craig F. Culver, 345/161, 157, 184 :IMAGE AVAILABLE:
3. 5,638,826, Jun. 17, 1997, Communication method and system using brain waves for multidimensional control; Jonathan R. Wolpow, et al., 600/544; 340/825.19; 345/157; 463/36; 600/545 :IMAGE AVAILABLE:

=> s 5367315/uref

L8 5 5367315/UREF

=> d 18 1-

1. 5,686,942, Nov. 11, 1997, Remote computer input system which detects point source on operator; James V. Ball, 345/158; 364/559 :IMAGE AVAILABLE:

2. 5,635,957, Jun. 3, 1997, Cursor control apparatus having foot operated pedal and method for same; Gary F. Feierbach, et al., 345/163, 167 :IMAGE AVAILABLE:

3. 5,627,565, May 6, 1997, Space coordinates detecting device and input apparatus using same; Ichiro Morishita, et al., 345/158, 157; 356/375 :IMAGE AVAILABLE:

4. 5,617,312, Apr. 1, 1997, Computer system that enters control information by means of video camera; Noriyuki Iura, et al., 364/188; 345/157; 358/453; 382/291 :IMAGE AVAILABLE:

5. 5,491,492, Feb. 13, 1996, Method and apparatus for eye tracking for convergence and strabismus measurement; R. Benjamin Knapp, et al., 345/8; 351/209, 210 :IMAGE AVAILABLE:

=> d hist

(FILE 'USPAT' ENTERED AT 15:51:40 ON 17 NOV 1997)

L1 2 S MRI AND 345/156-158/CCLST
L2 4 S EEG AND 345/156-158/CCLST
L3 38 S THOUGHT AND 345/156-158/CCLST
L4 0 S THOUGHT CONTROL? AND 345/156-158/CCLST
L5 2 S BRAIN WAVE AND 345/156-158/CCLST
L6 0 S 5638826/UREF
L7 3 S 5474082/UREF
L8 5 S 5367315/UREF

4,651,145

128/905? CP4 6014

340/825.19? PK2 5A12

341/21,32? PK2 5A12

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1. 5,687,286, Nov. 11, 1997, Neural networks with subdivision; Yaneer Bar-Yam, 395/21, 23, 24 :IMAGE AVAILABLE:

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=> d hist

(FILE 'USPAT' ENTERED AT 12:29:11 ON 18 NOV 1997)

L1 1488 S ARTIFICIAL INTELLIGENCE
L2 75 S L1 AND 345/CLAS
L3 4 S L1 AND 345/156-159/CCLST
L4 11 S L1 AND EEG

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PKZ 4C65

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=> d hist

(FILE 'USPAT' ENTERED AT 10:00:28 ON 19 NOV 1997)
L1 1 S ARTIFICIAL INTELLIGENCE AND 5546943/PN
L2 1411 S MAGNETIC SOURCE IMAG? OR MSI
L3 5 S L2 AND ARTIFICIAL INTELLIGENCE

participants and their affiliations.

Table 1. AAAI-98 Robot Exhibition Participants.

Autonomous Robots

OFFICE PLANT #1	Michael Mateas, Marc Bohlen	Carnegie Mellon University
CMTRIO	Manuela Veloso, Will Uther	Carnegie Mellon University
Sony PETS	Ian Horswill, Dac Le	Northwestern University
KLUGE	Ian Horswill, Dac Le	Northwestern University
MINDART	Maria Gini	University of Minnesota
TBMIN	Maria Gini, Paul Rybski	University of Minnesota
THE SPIRIT OF BOLIVIA	Barry Werger, Goskel Dedeoglu	University of Southern California/ULLANTA
NOMAD	Reid Simmons, Mark Maimone	Carnegie Mellon University
XAVIER	Reid Simmons	Carnegie Mellon University

Remote-Controlled Robots/Hardware Platforms

ATRV-2	Tyson Sawyer	Real World Interface, Inc.
STRIDE	Sarah Finney Stereo	IS Robotics
URBAN ROBOT	Sarah Finney Perception	IS Robotics
PEPE	Alexander Stoytchev, Rawesak Tanawongsuwan	Georgia Institute of Technology
COG	Rodney Brooks	Massachussets Institute of Technology
KISMET	Cynthia Breazeal, Brian Scassellati	Massachussets Institute of Technology
BEAST	Laurent Chabin	Independent
SNIKY THE SNAKE	Laurent Chabin, Roger Crochin	Independent

Robot Capabilities/Software Architectures

BABU and PI: Language	Kurt Konolige, Chris Eveland	SRI International
JAVABOTS	Paul Vogt	Vrije Universiteit Brussels
	Tucker Balch	Georgia Institute of Technology

PEPE, the personal pet, is another of the entertainment-oriented robots. PIPE'S developers, Alexander Stoytchev and Rawesak Tanawongsuwan, gave a presentation about this small PEBBLES III--class robot manufactured by IS Robotics (figure 2). The long-term objective of this Georgia Institute of Technology research project is to build an intelligent, adaptive, user-friendly agent that displays different pet-like emotional states and a wide range of behaviors. PEPE will interact with, and learn about, its user as naturally as possible, thus making the user perceive PEPE as a pet rather than a toy.

(Figure 2 ILLUSTRATION OMITTED)

PEPE'S underlying architecture is another Georgia Tech project, JAVABOTS, developed by Tucker Balch. JAVABOTS is a new system for developing and executing control systems in simulation and on mobile

game can be a success. Success is complete when both robots agree that they have communicated the same object. Otherwise, the lexicon is adapted by word-creation or word-meaning adoption.

Another robot developed to address human desires, rather than perform explicit tasks, is BEAST, a remote-controlled robot that looks like a crab when walking sideways. The developer, Laurent Chabin from Versailles, France, submitted a video of the four-legged mobot (figure 4). BEAST'S possible uses are purely in the eye of the beholder; Chabin says, "This machine will have the purpose you find for it."

(Figure 4 ILLUSTRATION OMITTED)

Chabin, along with Roger Crochin, also sent video describing SNIKY, a mechanical snake (figure 5). SNIKY is composed of nine wagons, each with two wheels. It is manually remote controlled, with one channel to control head direction and one channel to control the rate that the head position is copied toward the tail. By taking an S shape and forcing the movement to propagate tailward, the snake uses friction to push itself forward. The remote control allows the user to explore different movement strategies for different terrains.

(Figure 5 ILLUSTRATION OMITTED)

Another system that demonstrated complex handling of joints was TBMIN, a trailer-backing minirobot by Paul Rybski and Maria Gini at the University of Minnesota (Hougen, Rybski, and Gini 1999). TBMIN is a Lego robot, shown in figure 6, controlled by an on-board HANDY BOARD. TBMIN learns how to back a car and trailer rig to a target location by steering the front wheels of the car. The system uses laterally connected artificial neural networks to improve the efficiency of a basic reinforcement learning mechanism. The input consist of the hitch angle and the angle of the trailer to the target; the output is what direction to turn the steering mechanism. The system succeeds if it reaches the goal and fails if it jackknifes, or the goal angle exceeds 90 degrees. UMinn is currently extending the software to reverse a car with a double-trailer connection.

(Figure 6 ILLUSTRATION OMITTED)

UMinn demonstrated a second group of Lego-based autonomous robots, called **MINDART** (Minnesota distributed autonomous robotic team) (Rybski et al. 1998), shown in figure 7. **MINDART** was designed to study how to use multiple robots to efficiently solve problems. The robots find and collect target objects and return them to a home base. The targets transmit a constant stream of infrared light that the robots can detect. When a robot is close enough to a target, it slides its lifting mechanism and picks up the target. The robot then delivers the target to the home base, tracked by photoresistors mounted on top of a turret that can turn 360 degrees. The on-board computer is a HANDY BOARD programmed using INTERACTIVE C. The robots' programming is completely reactive. They do not maintain any record or map of their environment, and they do not communicate with each other.

(Figure 7 ILLUSTRATION OMITTED)

Following the theme of teamwork, two sets of soccer-playing robots appeared at the exhibition. The first, THE SPIRIT OF BOLIVIA (figure 8), was developed by the University of Southern California and the robotic theater troupe, ULLANTA, under the direction of Barry Werger and Goksel Dedeoglu. Two members of their middle-size RoboCup team demonstrated their skills by playing against each other as well as the audience. One was the fielder named NINANINA, a PIONEER AT robot controlled by a PC104 processor running AYLLU under QNX; the other was the goalie PAPA WAYK'U, a B14 base, with two Cognachrome vision systems, which was built by Newton Laboratories. The goalie localized itself using the white lines near the goal while moving extremely rapidly to intercept the ball. The fielder combined sonar-based obstacle avoidance with compass and dead-reckoning localization to interact safely with humans and other robots. It also used vision-based ball and goal identification to direct its movements, safely lining up with the goal and manipulating the ball. Programming was done with a strict behavior-based approach that resulted in robust and

XAVIER

www.cs.cmu.edu/~xavier/www/

In closing, the AAAI Mobile Robot Competition and Exhibition provides a unique, first-person venue for demonstration and discussion of mobile robotics research. The flavor of the exhibition reflects leading-edge research in the community. The 1998 robot exhibition witnessed an interesting shift because a new focus of research is emerging: Many investigators are moving from the study of basic mobility and navigation to human interaction, multiagent challenges, and even entertainment. Thus, the exhibition is a vital component of the annual AAAI conference.

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Tucker Balch builds robots at the Robotics Institute at Carnegie Mellon University. He received a B.S. from the Georgia Institute of Technology in 1984 and an M.S. from the University of California at Davis in 1988, both in computer science, and a Ph.D. in autonomous robotics from Georgia Tech in 1998. From 1984 to 1988, he was a computer scientist at the Lawrence Livermore National Laboratory as well as a pilot in the United States Air Force. His research focuses on the challenges of controlling large teams of mobile robots. His e-mail address is trb@cs.cmu.edu.

Karen Zita Haigh is a senior research scientist at the Honeywell Technology Center in Minneapolis, Minnesota. She completed her Ph.D. in computer science at Carnegie Mellon University in the spring of 1998. For her thesis work, she built a robotic system that created symbolic task plans for asynchronous goal requests and learned from its experiences. Her current research interests include robotics, planning, and machine learning. Her e-mail address is khaigh@htc.honeywell.com.

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13/7/13 (Item 1 from file: 141)

DIALOG(R) File 141: Readers Guide

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03530164 H.W. WILSON RECORD NUMBER: BRGA97030164 (THIS IS THE FULLTEXT)
Mind over matter.

Popular Electronics (1989) v. 14 (Jan. 1997) p. 29-30+

LANGUAGE: English

WORD COUNT: 1978

TEXT:

MINDDRIVE THOUGHT-DRIVEN SOFTWARE. From The Other 90[percent] Technologies, Inc., 2505 Kerner Blvd., San Rafael, CA 94901; Tel. 415-460-1010; Fax: 415-460-1919; e-mail: in-fo@other90.com. Price: Hardware, \$139; Application titles, \$24.95 to \$39.95.

You're playing a simulated skiing game on your PC. As you maneuver your way down a tricky slalom course, you make your turns not with your joystick or mouse--but simply by thinking which way you want to go. Science fiction, right? Not anymore, thanks to the MindDrive from The Other 90[percent].

Actually, the concept of manipulating inanimate objects with your thoughts or emotions is nothing new. Beside those countless science fiction tales, remember mood rings? On the more practical side, how about lie detectors?

The concept behind polygraph tests is that telling a lie is stressful, and stress stimulates certain detectable biological changes. A polygraph works by charting such parameters as a subject's normal heart and respiration rates during a series of innocuous, non-threatening questions. Then, when the tougher questions are asked, an answer that is accompanied by any anomalies in the established patterns is considered to be a false statement.

Lie-detecting is viewed as an inexact science. That's why polygraph results are not accepted as evidence in a court of law.

That our thoughts and emotions produce measurable bio-electric signals is, however, an indisputable fact. Different bio-electric patterns are generated by various mental activities, such as analyzing, remembering, and relaxing. Creative brain functions cause different physical reactions than do analytic functions; positive and negative thoughts also register differently.

Traditional bio-feedback techniques measure the conductivity and electrical activity of the skin in an attempt to determine what is going on in a subject's brain. Biofeedback measurements are known as galvanic skin response (GSR) and electrodermal reflex (EDR).

Those techniques work, but two problems keep them from being put to practical use, at least in terms of translating thoughts into signals that can be used to control devices or computers. First, there is a delay of 2 1/2-3 1/2 seconds between the time a thought occurs and the traditional measurement of the skin's reaction. Second, the human body does a good job of keeping physiological parameters in balance. When thoughts or emotions trigger changes in heart rate, blood pulse volume, and temperature, the autonomic nervous system leaps into action, trying to pull them back to normal.

According to The Other 90[percent], its patented MindDrive technology overcomes those obstacles. It provides almost instantaneous measurements. And it is able to decipher the difference between physiological signal generated by a volitional thought (transmitted through the central nervous system) and a physiological signal that has been changed by the autonomic nervous system. The MindDrive supposedly filters out those changes triggered by the autonomic nervous system, leaving only those signals generated by cognitive/volitional thoughts.

The company says that the MindDrive sensor measures not just heart, temperature, and blood pressure, but also something called composite neuro activity, or CNA--a complex of intricate electrical signals. The MindDrive automatically and continuously analyzes five CNA signal components: Amplitude (the output and strength of signals); velocity (the speed at which the signals change); attenuation (the size of the changes); the "delta" or asymmetry of the CNA signals as compared to each other; and a

combination of the phasic (rate of change) and tonic (absolute measurement) signals.

By studying the CNA signals in greater detail than has been possible previously, and combining the translated CNA signals with information from the heart and other biological indicators, the MindDrive can chart a variety of mental and emotional states. For example, anger causes the heart beat and blood pulse volume to rise, reduces temperature, and creates a distinct CNA pattern. The MindDrive uses its catalog of charted states and a proprietary artificial-intelligence program not only to "read" a subject's thoughts and emotions, but also to help the subject create and replicate a variety of desired mental skills and emotional states.

It all sounds good on paper, doesn't it? But does it work? We were highly skeptical, even after a demonstration by a representative of The Other 90[percent]. He asked us to jot down a number from one to ten on a piece of paper. While wearing the MindDrive sensor, we answered a series of questions he posed: "Is the number one? Two? Three? Four?" By reading the MindDrive's interpretations of our bio-electric signals, he properly guessed the right number each time.

Okay, that was sort of neat. But we remained dubious about how the device would function as a software interface, and even more so of the company's claims that "the MindDrive is able to help users develop and replicate optimal learning, thinking, and emotional skills and states." But, hey, we're always willing to give a new Gizmo a try.

The MindDrive consists of a small sensor sleeve that fits onto any of the user's fingers, and an interface that plugs into a PC-compatible computer. Minimum system requirements are a 486 CPU, DOS 5.0, a double-speed CD-ROM drive, one available 9-pin serial port, and a Sound-Blaster or compatible sound card.

The manual suggests wearing the sensor on any of the three middle fingers of your left hand (unless you're a southpaw), leaving your right hand free to use a mouse or arrow keys, if necessary. A Velcro strap is used to prevent the MindDrive from slipping off, and to keep the center of your fingertip resting lightly on the sensor. It takes just a few seconds for the sensor to "read" you, and then you're ready to go.

We started with **MindSkier**, a CD-ROM game that allows you to shuss down the slopes using your mind to make you control your skis. You have a choice of four different courses, slalom, grand slalom, downhill, and a combination that includes one run on each of the courses. There are beginner and advanced levels of play.

In **MindSkier** as well as the other betaversion MindDrive games we sampled, the overall quality is adequate, but certainly nothing to write home about. Installation is pokey; graphics and sound are basic. The games work only with the MindDrive interface--you can't fall back on your trusty joystick. But, we reasoned, the technology itself is so new and exciting, why quibble over the small stuff?

We strapped on our sensor (it was much easier than gearing up for the real thing), and hit the slopes--and also hit the course markers, every patch of ice, the side of a ski jump, exposed rocks, and an innocent group of spectators at the bottom of the hill. No matter how hard we concentrated, the game proceeded as if we weren't there. In fact, when we closed our eyes, said a prayer, and just went for it (sort of like our first real-life ski experience) we actually logged one of our all-time high scores.

Switching to beginner mode, we gave it another shot. Our performance improved, but not significantly. After a few hours of skiing every run available, changing our speed, and adjusting the sensitivity level, we were left wondering why the ski patrol hadn't arrived to pick up the pieces.

Next, we decided to go with a slower, safer sport--MindBowling. It wasn't quite as exciting as the downhill action, but we did manage to consistently improve our game with practice. Not only did we steadily raise our score (from 72 on our first try to 205 after an hour's play), but

we also made sure that our imaginary opponent didn't break a 10.

Unfortunately, it wasn't our minds that were being honed with practice. We learned, quite accidentally, that applying pressure to the sensor made the ball move to the left; reducing pressure moved it to the right. As directed, we'd strapped the sensor onto a finger on our left hand. It was just natural to lean right--and reduce pressure--when we wanted the ball to move that way, and lean left--and press down--when we wanted it to go left.

When we purposely put on the pressure, the results were pretty impressive. A heavy hand put our opponent's ball in the left gutter on almost every throw. And a bit of fingertip maneuvering gave us a strike or a spare in almost every frame. But we were using our hands to do it, not our minds.

Perhaps, we postulated, every game depends on the same (presumably) inadvertent pressure on the hand--like using a Ouija board and unwittingly moving the pointer to the letters that spell the answer you want to hear.

We decided to give skiing another try, to see if the technique could improve our times. It didn't.

When we practiced at the top of the course, the game seemed to respond to hand pressure in much the same way that MindBowling did. Once we started moving downhill, however, the results became exaggerated, sending us careening from one edge of the course to the next, but never where we wanted to go. Our scores actually got worse!

We were tempted to go back to MindBowling to try for a perfect game (and a perfect 0 score for our imaginary opponent). Instead, we moved on to FIB, a liedetecting game with several variations.

FIB requires two players, the Examiner and the Responder. The Examiner asks a series of questions, called the "Comparative Question Technique." As in a standard polygraph test, the Responder's answers are judged true or false based on bio-electric readings. In this case, when the Responder tells a fib, the reading should shoot into the "red" zone.

Four FIB games are provided. "MindReader" is a guessing game in which the Responder selects one of five items shown on screen. The examiner must then guess the secret item. In "Quiz Me," one question is repeated five times, with a fill-in-the-blank difference--for instance, "Your favorite pizza topping is" The Examiner asks the question five times, filling in "pepperoni," "anchovies," "peppers," "sausage," and "onions." The Responder answers yes or no to each; again, the Examiner must determine which responses are true. In "Cross Examination," the Examiner gets to ask ten questions to determine what item the Responder is thinking of, knowing beforehand the item's general category. Finally, there's "Free Form Fib," in which[cont. on p.32] the Examiner uses the comparative questioning technique to ask the Responder anything. Recommended as a party game, it could be the computer version of "Truth or Dare"--supposedly with the added bonus of knowing what the truth was.

Once again, however, we didn't do very well. Our true and false responses were difficult to tell apart--some of each went into the red zone, others didn't.

Finally, we sampled PinballMind, another MindDrive game in which we should have been able to control the movements of the ball and activate the flippers using our brain power. The game seemed to have a mind of its own, however, and it was definitely overpowering ours.

After performing so poorly in all those games, we were quite glad to note that manual definitively states: "Thought signal strengths and intelligence are in no way connected." Phew! We were beginning to get concerned. We'd like to think that the problem lies not in our heads, but in the MindDrive and its software.

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09022262 SUPPLIER NUMBER: 18751380 (THIS IS THE FULL TEXT)

'Mind-reading' software runs on standard PCs. (The Other 90% Technologies) (Product Announcement)

Johnson, R. Colin
Electronic Engineering Times, n921, p49(1)
Sep 30, 1996

TEXT:

San Rafael, Calif. - The Other 90% Technologies Inc.-brainchild of former Atari head Ron Gordon-claims to have mastered "mind control" of computer functions in its first product. The \$140 product, announced more than a year ago, uses sensors to take standard measurements of blood pressure, temperature and pulse; the company's MindDrive software then automatically extrapolates from that data to decode a "thought vocabulary" of six words.

Lie detectors and other traditional approaches to interpreting biological signals to deduce a subject's mental state cannot be easily automated, because the data interpretation requires human experts and because the signals being read-galvanic skin response, in the case of the typical lie detector-are not registered until about 3 seconds after the thought that triggered the response occurs.

MindDrive reads signals that track thoughts without delay:namely, blood pressure, pulse and temperature. Combinations of instantaneous changes in those signals are indicative of a particular thought. For instance, a rising pulse rate whose phase is slightly ahead of a rise in pressure and a drop in temperature might indicate "anger."

MindDrive's creators call those combined signals composite neural activity. CNA measures amplitude, velocity (defined as a signal's rate of change) and attenuation, as well as the asymmetrical relationships among signals in both phase and magnitude.

Autonomic response

Previous attempts to read thoughts by tracking real-time signals have been foiled by the autonomic nervous system, which quickly moves to quell the very changes that MindDrive works to recognize. The Other 90% devised a dynamic filter that is said to remove the "noise" of the compensatory actions of the autonomic nervous system, leaving behind only the effects of conscious, volitional thoughts.

As an analysis-software product that runs on a PC, MindDrive is claimed to provide real-time recognition of thoughts from within a vocabulary of six words. Six thought patterns are sufficient to control the on-screen cursor by decoding for the left, right, up, down and stop commands. Thoughts can also be used to activate other on-screen controls, much as a mouse and keyboard are typically used.

The Other 90% is offering the initial product as a turnkey package with 10 bundled mind-enabled game titles to demonstrate the capabilities of its six-word vocabulary. OEMs should be interested in the future of the technology, whose capability in the lab has already been extended beyond six words.

One of the bundled games, called Fib, allows players to quiz each other to guess what the other is thinking, with MindDrive serving the lie-detector function. **MindMusic** lets the participant compose and conduct music via mood control. MindDoodle has a structured mode that lets the user mentally control an on-screen paint brush.

MindSkier directs a skier left and right during a downhill run; MindBowling lets the user "aim" a bowling ball down a 3-D lane. Other games include PinballMind and MindFlight.

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13/7/15 (Item 1 from file: 647)
DIALOG(R) File 647: CMP Computer Fulltext
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01111909 CMP ACCESSION NUMBER: HPC19961201S0086

Mind games: Tap your brainpower (Fun and Games-Great escapes for grown-ups)

Julie Cohen

HOME PC, 1996, n 312, PG318

PUBLICATION DATE: 961201

JOURNAL CODE: HPC LANGUAGE: English

SECTION HEADING: Reviews

TEXT:

Ever wish you could control your computer with the force of your thoughts, never moving a muscle? Now you can-in theory, if not in practice.

MindDrive contains a single sensor that you place over any finger; plug the device into a serial port, and you're ready to begin harnessing those brainwaves on any of 10 applications. **MindSkier** is a 3-D downhill-skiing game with simple graphics and four set courses. To test the device-and my brainpower-I chose the beginner's slalom course, a gently sloping hill with 27 widely spaced gates. I ran these four variations three times apiece, trying to score a perfect 27.

Snow Bunny: I tried to focus on the gates, but it didn't seem to matter-I flew wildly from left to right. I even hit a few gates and fell, but soon got up and continued down the hill. Average score: 22.7.

Hot Dog: I tried to ski into the crowds gathered on the left and right. But **MindSkier** runs you on a very narrow path, and the spectators are out of range. In fact, the more I thought about plowing into the crowds and trees, the more gates I skied through with success. So much for daredevil stunts. Average score: 24.7.

Blind Woman's Bluff: I turned my back to the computer and looked to the left and right, at intervals of approximately one second. As I did this, a colleague noticed that my skier often moved to the right when I looked right and to the left when I looked left. But I've skied better. Average score: 23.3.

I Go to Rio. I closed my eyes and thought of the best thing I could imagine: a fantasy vacation far away from the slopes. Average score: 25. \$149 for MindDrive (PC); \$29 to \$39 for games (Windows 3.1 CD-ROM, DOS CD-ROM) from The Other 90% Technologies, (800) 706-0456, (415) 460-1010, <http://www.other90.com>. Circle #420

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01105361 CMP ACCESSION NUMBER: EET19960930S0067

'Mind-reading' software runs on standard PC

R. Colin Johnson

ELECTRONIC ENGINEERING TIMES, 1996, n 921, PG49

PUBLICATION DATE: 960930

JOURNAL CODE: EET LANGUAGE: English

SECTION HEADING: Technology

TEXT:

San Rafael, Calif. - The Other 90% Technologies Inc.-brainchild of former Atari head Ron Gordon-claims to have mastered "mind control" of computer functions in its first product. The \$140 product, announced more than a year ago, uses sensors to take standard measurements of blood pressure, temperature and pulse; the company's MindDrive software then

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Lie detectors and other traditional approaches to interpreting biological signals to deduce a subject's mental state cannot be easily automated, because the data interpretation requires human experts and because the signals being read—galvanic skin response, in the case of the typical lie detector—are not registered until about 3 seconds after the thought that triggered the response occurs.

MindDrive reads signals that track thoughts without delay:namely, blood pressure, pulse and temperature. Combinations of instantaneous changes in those signals are indicative of a particular thought. For instance, a rising pulse rate whose phase is slightly ahead of a rise in pressure and a drop in temperature might indicate "anger."

MindDrive's creators call those combined signals composite neural activity. CNA measures amplitude, velocity (defined as a signal's rate of change) and attenuation, as well as the asymmetrical relationships among signals in both phase and magnitude.

Autonomic response

Previous attempts to read thoughts by tracking real-time signals have been foiled by the autonomic nervous system, which quickly moves to quell the very changes that MindDrive works to recognize. The Other 90% devised a dynamic filter that is said to remove the "noise" of the compensatory actions of the autonomic nervous system, leaving behind only the effects of conscious, volitional thoughts.

As an analysis-software product that runs on a PC, MindDrive is claimed to provide real-time recognition of thoughts from within a vocabulary of six words. Six thought patterns are sufficient to control the on-screen cursor by decoding for the left, right, up, down and stop commands. Thoughts can also be used to activate other on-screen controls, much as a mouse and keyboard are typically used.

The Other 90% is offering the initial product as a turnkey package with 10 bundled mind-enabled game titles to demonstrate the capabilities of its six-word vocabulary. OEMs should be interested in the future of the technology, whose capability in the lab has already been extended beyond six words.

One of the bundled games, called Fib, allows players to quiz each other to guess what the other is thinking, with MindDrive serving the lie-detector function. **MindMusic** lets the participant compose and conduct music via mood control. MindDoodle has a structured mode that lets the user mentally control an on-screen paint brush.

MindSkier directs a skier left and right during a downhill run; **MindBowling** lets the user "aim" a bowling ball down a 3-D lane. Other games include **PinballMind** and **MindFlight**.

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13/7/17 (Item 1 from file: 696)

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00064789

Mind control over PCs is claimed by The Other 90% for new

CONSUMER MULTIMEDIA REPORT

September 30, 1996 DOCUMENT TYPE: NEWSLETTER
PUBLISHER: WARREN PUBLISHING INC.

LANGUAGE: ENGLISH WORD COUNT: 170 RECORD TYPE: FULLTEXT

TEXT:

Mind control over PCs is claimed by The Other 90% for new

technology, which it says eventually will be applied to CE devices. Developed over 7 years, MindDrive (\$149) consists of small sensor sleeve that fits onto any finger and microcontroller that plugs into PC. Sensor reads such factors as changes in skin temperature, moisture and electromagnetic levels and transmits these as thought signals to PC, enabling users to play videogames such as MindFlight and **MindSkier** or draw pictures with **MindArt** (titles \$24-\$39). MindDrive will be available at CompUSA, Computer City, Electronic Boutique, Frys, Sun TV, others. The Other 90% Pres. Ron Gordon, ex-Atari head, said company expects to sell 100,000 in U.S. this year and expand overseas next year, with Japan likely first target. Gordon said company is looking at ways to use thought control to operate videogame consoles and TV remote controls. MindDrive currently is manufactured at undisclosed Cal. factory, but Gordon said company will move production offshore when sales volume increases.

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13/7/18 (**Item 2 from file: 696**)
DIALOG(R) File 696:DIALOG Telecom. Newsletters
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00063954

"Mind control" operating PCs is claimed by product developed
CONSUMER ELECTRONICS

September 23, 1996 DOCUMENT TYPE: NEWSLETTER
PUBLISHER: WARREN PUBLISHING INC.
LANGUAGE: ENGLISH WORD COUNT: 164 RECORD TYPE: FULLTEXT

TEXT:

Mind control" operating PCs is claimed by product developed by The Other 90%. Company says technology eventually will be applied to various CE devices. Developed over 7 years, MindDrive (\$149) consists of small sensor sleeve that fits onto any finger and microcontroller that plugs into PC. Sensor reads such factors as skin temperature, moisture and electromagnetic levels and transmits them to PC, allowing playing of games such as MindFlight or **MindSkier** or drawing of pictures with **MindArt** (titles \$24-\$39). MindDrive will be available at CompUSA, Computer City, Electronic Boutique, Frys, Sun TV, others. The Other 90% Pres. Ron Gordon, ex-Atari head, said company expects to sell 100,000 in U.S. this year, expand overseas next year, with Japan likely first target. He said company is looking at ways to use "thought control" to operate videogame consoles and TV remote controls. MindDrive currently is made at undisclosed Cal. factory, but Gordon says company will move production offshore when sales increase

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13/7/19 (**Item 3 from file: 696**)
DIALOG(R) File 696:DIALOG Telecom. Newsletters
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00051063

JUST PUT YOUR MIND TO IT
Multimedia Daily

April 11, 1996 VOL: 3 ISSUE: 73 DOCUMENT TYPE: NEWSLETTER
PUBLISHER: BRP PUBLICATIONS
LANGUAGE: ENGLISH WORD COUNT: 400 RECORD TYPE: FULLTEXT

TEXT:

It's mind-blowing. The Other 90% Technologies Inc. has struck a deal with Miramax Films to develop a next-generation of movie making allowing viewers to determine the outcome of a film via Other 90%'s MindDrive technology. In addition, Miramax announced it will make a financial investment of an undisclosed amount in the technology developer (MMD 6/19/95). Ron Gordon, the creator of MindDrive, was head of Atari Corp. in the '70s.

MindDrive uses a sensor sleeve that fits on a finger like a ring, which then picks up signals from the brain and transmits them to the MindDrive and a computer. MindDrive technology interprets those thought signals (which include everything from temperature, humidity and pulse) and directly moves the onscreen image the user is thinking about. For example, one of Other 90%'s game titles is " **MindSkier** , " showing a figure racing through a slalom course. The user is able to think "left" to make the figure turn left or "stop" for the appropriate response. However, it does require concentration. If the user begins daydreaming, a picture of Uma Thurman does not appear on the screen. Rather, the skiing figure slides all over the place. The \$150 MindDrive technology is expected to land on retail shelves this summer supported by 10 software titles.

Miramax is looking at a variety of options to apply this new technology. "We're going to try a short film on the Internet possibly sometime this fall," Mark Gill, president of marketing of Miramax Films, told Multimedia Daily. "Perhaps the next step would be a short 30 to 40 minute film. This new technology is like creating a parallel universe to CD-ROM or home video."

While the technology may make it to a full audience, big screen environment, viewers would have to vote on an outcome, which "would be asking for the collective consciousness of the viewers," according to Gill, and that may lose some of the technology's charm.

Users, as well as film directors, will be able to create and choose multiple endings. For example, an actor in a MindDrive-enhanced movie may walk across a bridge without a care in the world. Perhaps another time, the user would be nervous as the actor sauntered across the bridge, causing the actor to fly off the bridge and into water below, causing a different ending and throwing a damper on things. (Other 90% 415-460-1010; Miramax 212-941-4031, www.miramax.com

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13/7/20 (Item 4 from file: 696)
DIALOG(R) File 696:DIALOG Telecom. Newsletters
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00050608
JUST PUT YOUR MIND TO IT
Sharon McLoone, Associate Editor
Information & Interactive Services Report
April 19, 1996 VOL: 17 ISSUE: 10 DOCUMENT TYPE: NEWSLETTER
PUBLISHER: BRP PUBLICATIONS
LANGUAGE: ENGLISH WORD COUNT: 413 RECORD TYPE: FULLTEXT

TEXT:

It's mind-blowing. The Other 90% Technologies Inc. has struck a deal with Miramax Films to develop a next-generation of movie making that will allow viewers to determine the outcome of a film via Other 90%'s MindDrive technology. In addition, Miramax announced it will make a financial investment of an undisclosed amount in the technology developer.

MindDrive uses a sensor sleeve that fits on a finger like a ring, which then picks up signals from the brain and transmits them to the MindDrive and a computer. MindDrive technology interprets those thought signals (which include everything from temperature, humidity and pulse) and directly moves the onscreen image the user is thinking about.

For example, one of The Other 90%'s game titles is "MindSkier," showing a figure racing through a slalom course. The user is able to think "left" to make the figure turn left or "stop" for the appropriate response. However, the technology does require concentration. If the user begins daydreaming, a picture of Uma Thurman does not appear on the screen. Rather, the skiing figure slides all over the place.

The \$150 MindDrive technology is expected to land on retail shelves this summer supported by 10 software titles.

Variety of Application Options

Miramax is looking at a variety of options to apply this new technology. "We're going to try a short film on the Internet, possibly sometime this fall," said Mark Gill, president of marketing of Miramax Films. "Perhaps the next step would be a short 30- to 40-minute film. This new technology is like creating a parallel universe to CD-ROM or home video."

While the technology may make it to a full audience, big-screen environment, viewers would have to vote on an outcome, which "would be asking for the collective consciousness of the viewers," according to Gill, and that may dilute some of the technology's charm.

Multiple Story Endings

Users, as well as film directors, will be able to create and choose multiple endings. For example, an actor in a MindDrive-enhanced movie may walk across a bridge without a care in the world. Perhaps another time, the user would be nervous as the actor sauntered across the bridge, causing the actor to fly off the bridge and into water below, triggering a different ending and throwing a damper on things.

Ron Gordon, the creator of MindDrive, was head of Atari Corp. in the '70s.

The Other 90% is at (415) 460-1010; Miramax, at (212) 941-4031 or www.miramax.com.

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13/7/21 (Item 1 from file: 810)
DIALOG(R) File 810:Business Wire
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0624463 BW0075

OTHER 90 PERCENT TECH: The First Computer Product Operated By Human Thought Hits Retailers' Shelves Today; The Other 90% Technologies Inc. Launches MindDrive -- A Revolutionary New Way to Harness The Power of Thought

September 18, 1996

Byline: Business Editors/Computer Writers

SAN RAFAEL, Calif.--(BUSINESS WIRE)--Sept. 18, 1996--After seven years of research and development, the MindDrive, the first product enabling users to control computers with only their thoughts, will hit retailers' shelves today.

This mind-driven product allows consumers to move on-screen images, run computer programs and even play video games.

The MindDrive is debuting at hundreds of retailers nationwide, including major computer chains such as CompUSA, Computer City and

Software Etc., Electronic Boutique, Egghead, as well as high-profile regional retailers such as The Wiz, Frys and Sun TV.

Demonstration Kiosks

Consumers across the country will experience using their minds in an all new way and test their new mind skills at MindDrive demonstration stations located at most retail locations.

The MindDrive will retail for approximately \$149.95 and ten initial applications are priced from \$24.95 to \$39.95.

MindDrive applications include: Entertainment products where success depends on how well one maneuvers their thoughts -- not just how fast they move a joystick; educational programs that focus on invaluable skills like concentration, creativity, memory and peak performance; and a title called Fib that introduces an entirely new home computing entertainment application. Using the MindDrive and the Fib program, users will declare if players' responses are facts or fibs.

The MindDrive device consists of a small sensor sleeve that fits onto any finger and a micro controller interface that plugs into PC compatible computers. The sensor reads and instantly transmits one's thought signals to the computer. Then the patented MindDrive CD programs analyze these signal patterns and translate them into a myriad of consumer application commands.

Ron Gordon is the creator of the MindDrive and president of The Other 90% Technologies, Inc.

"Until now, we have had to process all our thoughts and actions through our hands, words, and the machines we build. The MindDrive is the first step that could lead directly to using our minds to control actions and activities outside of our own bodies," said Gordon.

"We have chosen entertainment and education as the first applications for this new technology, but we believe that in the near future hundreds of products and processes will be able to be controlled with our thoughts."

MindDrive Application Titles

--MindFlight(TM) -- With your thoughts, fly through canyons, under bridges, and around buildings;

-- **MindSkier** (TM) -- Using just your thoughts, ski left and right, in and out of slalom gates;

-- **MindMusic** (TM) -- Compose music with your thoughts, then use your mind to conduct an orchestra or rock group;

-- **MindArt** (TM) -- Draw a picture on screen with your mind, then print it;

--Get Smart(TM) -- Use this unique program to enhance your memory, creativity, and concentration;

--FIB(TM) -- MindDrive helps you decide whether or not your friends are telling a fib;

--PinballMind(TM) -- Activate the flippers with your mind and use your thoughts to affect the movement of the ball itself;

--MindGames(TM) -- Three fun and classic style games --

MindWings, MindBlox and PlanetBall -- now controlled by your thoughts;

--MindBowling(TM) -- Bowl a strike by guiding the ball down the alley with just your thoughts;

-- The Zone(TM) -- How do athletes or writers get into the "Zone"? Learn to achieve and maintain this elusive state.

Miramax Films

Earlier this year, The Other 90% Technologies formed a strategic alliance with Miramax Films, the studio behind such feature film hits as "Pulp Fiction," "The Piano" and the 1996 Oscar nominee "The Postman (Il Postino)," to use MindDrive technology to:

--develop short films where the plot and outcome of the movies

are controlled by your thoughts;
--develop a feature film based on the technology;
--use the technology in feature films on related subjects;
--debut the MindDrive technology on the Internet.

Easter Seals Alliance

Just this month, The National Easter Seals Society, the nation's most prominent nonprofit organization devoted to assisting the physically challenged, announced their intention to put MindDrive kiosks in six selected national locations. According to Roger Wellman, Chief Information Officer for Easter Seals, "this technology has the potential to improve the quality of life for many people with disabilities."

Future Alliances and Applications

Following on the heels of the Miramax Films and Easter Seals alliances, The Other 90% will be licensing its technology and striking new alliances with leading firms in a variety of fields. Upcoming product applications and alliances will include the toy industry, virtual reality and third-party software development agreements.

One of the most exciting projects under development is the creation of a thought-generated vocabulary and personal computer interface. The company is now working with a vocabulary of six words that one can think and the MindDrive will display those words on screen and/or execute those thought commands.

About The Other 90% Technologies, Inc.

The MindDrive was conceived by Gordon in the mid-1970s, when he was heading Atari Inc. Gordon is widely acknowledged for his ability to transform advanced, expensive technologies into inexpensive, easy-to-use consumer products, such as video games, the pocket language translator and the first hand-held computer.

Following several high-tech business successes, Gordon returned to his vision of a thought-controlled interface in 1988 and founded The Other 90% (the company name refers to Einstein's postulation that we only use 10% of our brain power and Gordon's desire to discover what we can accomplish if we begin to use the rest).

Based in San Rafael, California, The Other 90% Technologies, Inc., is a privately-held firm dedicated to delivering the ability to use just the mind to accomplish whatever people want or need. For more information about the company and the MindDrive, refer to the company's web site, info@other90.com.

CONTACT: Access Communications, San Francisco
Anne Magor, 415/904-7070, ext. 288
amagor@accesspr.com
Jennifer Walker, 415/9904-7070, ext. 283
jwalker@accesspr.com

KEYWORD: CALIFORNIA

INDUSTRY KEYWORD: COMED COMPUTERS/ELECTRONICS
INTERACTIVE/MULTIMEDIA/INTERNET PRODUCT

?

17/3,K/1 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
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05375535 Supplier Number: 48174534
Biometrics industry hunts for applications.
Orman, Neil
The Business Journal - Serving Phoenix & the Valley of the Sun, p22
Dec 12, 1997
Language: English Record Type: Abstract
Document Type: Magazine/Journal; Tabloid; Trade

ABSTRACT:

...are two pioneers in the fledgling biometrics industry. Biometrics technology uses biological characteristics such as **fingerprint** and retinal **patterns** to secure and **control** access to **computer** networks and other systems. Intelitrak has developed a voice verification system, called Citadel Gatekeeper, that...

17/3,K/2 (Item 2 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
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02850254 Supplier Number: 43836537 (USE FORMAT 7 FOR FULLTEXT)
NEW FUZZY PATTERN COMPARATOR RUNS EIGHT DATA STREAMS AT ONCE.
News Release, p1
May 14, 1993
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 496

... Inc here announces a single-chip fuzzy logic pattern comparator that recognizes objects, characters, voice, **fingerprints**, currency and other identifying **patterns**. Applications include surveillance, robot **control**, **computer** aided manufacturing and data base search and retrieval, and others.

NLX-110 Fuzzy Pattern Comparator...

17/3,K/3 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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02357110 SUPPLIER NUMBER: 03781455 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Dana Ramsey of IBM describes a new chemical-detection system for industrial hygiene.
PR Newswire, SF10
May 21, 1985
LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 647 LINE COUNT: 00052

... monitors the air, activating an alarm when concentrations go above predefined levels. ICAMS measures and " **fingerprints** " molecules in the air sample with a **computer - controlled** mass spectrometer. Mass spectrometers break down molecules into recognizable **patterns** to identify specific chemical compounds.

Dana Ramsey, an IBM industrial hygienist from the General Products...

17/3,K/4 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01201680 SUPPLIER NUMBER: 04617756
Security firm develops retina-scanning device: Eyedentify expects to market
machine by end of this year.
LaPlante, Alice
InfoWorld, v9, n4, p35(1)
Jan 26, 1987
ISSN: 0199-6649 LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

...ABSTRACT: from Eyedentify Inc., a biometric hardware vendor. Biometric systems can identify users by voice pattern, **fingerprints**, or retina **patterns**. Biometric access **controls** allow the **computer** to identify users who are allowed to access certain files; such systems can also record
...

17/3,K/5 (Item 1 from file: 810)
DIALOG(R)File 810:Business Wire
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0107159 BW022

IBM CORP: New computer to aid hearing-impaired people to be demonstrated
Wednesday to Friday at Cal State Northridge

November 2, 1988

Byline: News/Assignment/Business Editors And Computer Writers

...to
disabled persons, that will be exhibited at the event. Also
included will be a **computer** keyboard **controlled** by **brain**
waves
accessed by electrodes and a computer **finger** spelling hand that
mechanically spells out a special sign language in the palm of
the...
?

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03079189 (THIS IS THE FULLTEXT)

Mind over movies

Booth, Stephen A

Popular Science (GPOS), v249 n6, p26, p.01

Dec 1996

TEXT:

ARMCHAIR FILM critics soon may be able to play actor and director in a new kind of movie. Miramax Films, a Disney vassal, says it will begin "Net-casting" mini-movies via the World Wide Web, where viewers may control the action and the outcome by thought.

No joystick or mouse need apply: This interactive cinema, slated to debut next year, exploits a recently released input device called MindDrive (\$140) to determine twists and turns of a multibranched plot. MindDrive is a PC accessory that translates mental activity into computer commands. In the seven-minute mini-films Miramax will post on its Web site, a viewer's mental reaction to run right or left from danger, for instance, works like a cinematic polygraph to advance the story line.

According to **MindDrive**'s maker, San Rafael, California-based The Other 90%, cerebral processes involving direction and emotional responses emit distinct bioelectrical signals. This output is measurable through the body's largest organ—the skin. **MindDrive** monitors these signals with a **sensor** strapped to a **fingertip**. The signals are then transmitted to a processor module that translates these impulses into computer commands.

MindDrive requires special software; right now, only about 10 programs, listing for between \$25 and \$40, make use of the technology. These tend to be sports simulations and exercises in mental gymnastics. Ultimately, the company hopes to develop more serious and useful applications that can be used by handicapped people, for example.—Stephen A. Booth.

Copyright Times Mirror Magazines, Inc. 1996

TEXT:

... danger, for instance, works like a cinematic polygraph to advance the story line.

According to **MindDrive**'s maker, San Rafael, California-based The Other 90%, cerebral processes involving direction and emotional...

...distinct bioelectrical signals. This output is measurable through the body's largest organ—the skin. **MindDrive** monitors these signals with a **sensor** strapped to a **fingertip**. The signals are then transmitted to a processor module that translates these impulses into computer...

10/7, K/12 (Item 1 from file: 635)

DIALOG(R) File 635:Business Dateline(R)

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0609502 95-65789

The Other 90% Technologies Inc. breaks through the thought barrier with **MindDrive**

Smotroff, Mark

Business Wire (San Francisco, CA, US) s1 p1

PUBL DATE: 950616

WORD COUNT: 567

DATELINE: Sausalito, CA, US

TEXT:

June 16, 1995--In a development that leapfrogs current computer capabilities, The Other 90% Technologies, Inc. has unveiled MindDrive, the first-ever technology that enables people to operate computers and other products with their thoughts.

Now, in a new category of products slated for the mass market, consumers will be able to control devices, run computer programs and even play video games using just the power of their minds.

"Thought response technology will eventually enable people to use only their minds to accomplish what they want or need," said Ron Gordon, founder of The Other 90% Technologies, Inc. and inventor of the MindDrive. "With the MindDrive, you don't need a keyboard, a joystick or a mouse to work with a computer, all you need are your thoughts."

How the MindDrive Works

The **MindDrive** uses a sensor sleeve that simply fits onto your finger. A small control console receives signals from your thoughts, which are transmitted from your mind to the **finger sensor**. Then, the **MindDrive** interprets these various thought signals and directly moves the desired object or image on screen.

For years, it has been possible to measure the output and strength of these signals. The MindDrive, however, goes far beyond these basic measurements, by recognizing and reading the complex matrix of signals produced by our thoughts with a sophistication and precision that until now has been impossible.

Proprietary Artificial Intelligence software, developed by The Other 90% and built into the small MindDrive unit, interprets these signals and translates them into commands understood by the standard PC -- which directly moves the desired object or image on a video screen.

Consumer Uses for the MindDrive

The MindDrive is the first step toward establishing a wide range of thought-response consumer products for all ages. The MindDrive, along with a series of compelling, easy-to-use consumer-oriented applications, will be available in early 1996. It will have a retail price between \$100 and \$200, depending on how many software programs are included with the MindDrive. Software applications will be divided into three categories:

- o An Entertainment Series -- thought controlled video games, toys and games.
- o An Education Series -- training memory concentration and creativity skills.
- o A Peak Performance Series -- programs to enhance work, school and sports performance.

Fourteen initial application programs are projected to be introduced with the MindDrive and will include: a downhill ski game where the player just thinks the turns and movement down the slope; an educational program that helps students learn new lessons and enhance their memory skills at the same time; and an art mind program which enables users to draw and color on the screen with their thoughts. The Other 90% is currently developing MindDrive applications with a world-wide team of 40 people, including a Ph.D. level programming group located in Siberia, Russia.

About The Other 90% Technologies, Inc.

The MindDrive was conceived by Ron Gordon in the mid-1970s, when he was heading Atari, Inc. Gordon is widely acknowledged for his ability to transform advanced, expensive technologies into inexpensive, easy-to-use consumer products, such as the pocket language translator and the first hand-held computer. Following several high-tech business successes, Gordon returned to his vision of a thought-controlled interface in 1988 and founded The Other 90%, based in Sausalito, Calif. The Other 90% Technologies, Inc., is a privately-held firm dedicated to delivering the ability to use just the mind to accomplish whatever people want or need.

Copyright Business Wire 1995

TEXT:

...work with a computer, all you need are your thoughts."

How the MindDrive Works

The **MindDrive** uses a sensor sleeve that simply fits onto your finger. A small control console receives signals from your thoughts, which are transmitted from your mind to the **finger sensor**. Then, the **MindDrive** interprets these various thought signals and directly moves the desired object or image on screen...

10/7, K/13 (Item 1 from file: 636)

DIALOG(R) File 636:Gale Group Newsletter DB(TM)
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02786150 Supplier Number: 45653051 (THIS IS THE FULLTEXT)

SOMETHING TO THINK ABOUT: A NEW SENSOR THAT READS THE MIND

Sensor Business News, v2, n14, pN/A

July 5, 1995

TEXT:

Think for a minute about this: A sensor can read your mind. A company called (and this is true) The Other 90% Technologies Inc. unveiled MindDrive, a product which the company claims ranks as the first-ever technology that enables people to operate computers and other products with their thoughts.

The **MindDrive** uses a sensor sleeve that fits onto human fingers. A small control console receives signals from human thoughts, which are transmitted from the human mind to the **finger sensor**. Then the **MindDrive** interprets these various thought signals and directly moves the desired object or image on screen.

"With the MindDrive, you don't need a keyboard, a joystick or a mouse to work with a computer. All you need are your thoughts," said Ron Gordon, the company founder and CEO and MindDrive inventor.

Gordon is one of those guys with vision and passion for this new type of mind experimentation. "I couldn't get the possibility of controlling things directly--with my mind--out of my mind," he said.

Gordon told us his company, which makes the sensor components for the MindDrive, expects to haul in \$60 million in revenues in 1996 and about \$200 million in 1997. Those revenues will be derived from the applications and software to be embedded within the MindDrive product.

So what about the name of the company? Gordon was ready with a response. "Einstein said we only use 10 percent of our brains. This is learning to use the other 90 percent." (Ron Gordon, 415/332-0433; Mark Smotroff, 415/904 -7070.)

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Set	Items	Description
S1	9	MINDDRIVE
S2	0	MINDSKIER OR MINDMUSIC OR MINDPOWERS OR MINDPINBALL OR MINDDART
S3	9	(MIND OR THINKING OR THOUGHT) () (PULSE? OR SIGNAL? OR WAVES)
S4	4460	BRAINWAVES OR (BRAIN OR THOUGHT) (3N) (WAVE?? OR PULSE?)
S5	1022942	ELECTRIC(3N)WAVES OR PATTERNS
S6	382376	(DIRECT? OR CONTROL? OR MANIPULAT? OR INSTRUCT? OR OPERAT?-)(3N)COMPUTER
S7	2175	FINGER?(3N) (SENSOR? OR DETECTOR?)
S8	50108	(BIOELECTRIC OR BIO()ELECTRIC OR ELECTRIC?) (3N) (PULSES OR - EMISSIONS OR SIGNAL?? OR IMPULSE?)
S9	6024	(S4 OR S5 OR S7 OR S8) AND S6
S10	35	S6 AND S4
S11	35	S10 NOT S3
S12	9	RD S3 (unique items)
S13	0	S11 AND S7
S14	2	S11 AND S8
S15	2	S14 NOT S12
S16	2	RD S15 (unique items)
S17	9	RD S1 (unique items)



12/3,K/1 (Item 1 from file: 34)
DIALOG(R) File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.

06664595 Genuine Article#: ZJ198 No. References: 22
Title: Morphodynamic impact of sea breeze activity on a beach with beach cusp morphology
Author(s): Masselink G (REPRINT) ; Pattiaratchi C
Corporate Source: UNIV WESTERN AUSTRALIA,CTR WATER RES/NEDLANDS/WA 6009/AUSTRALIA/ (REPRINT)
Journal: JOURNAL OF COASTAL RESEARCH, 1998, V14, N2 (SPR), P393-406
ISSN: 0749-0208 Publication date: 19980300
Publisher: COASTAL EDUCATION & RESEARCH FOUNDATION, 810 EAST 10TH STREET, LAWRENCE, KS 66044
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

...Abstract: the cusp morphological system.

During the sea breeze, the addition of locally-generated, short-period **mind waves** to the background swell resulted in an increase in wave height, a decrease in wave...

12/3,K/2 (Item 1 from file: 35)
DIALOG(R) File 35:Dissertation Abs Online
(c) 2004 ProQuest Info&Learning. All rts. reserv.

01516687 ORDER NO: AAD96-36775
MORAL IDENTITY AND THE GOOD IN THE THOUGHT OF IRIS MURDOCH
Author: ANTONACCIO, MARIA ANITA
Degree: PH.D.
Year: 1996
Corporate Source/Institution: THE UNIVERSITY OF CHICAGO (0330)
Source: VOLUME 57/07-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3057. 282 PAGES

...outline its constructive implications for future ethical inquiry.
The central argument is that Murdoch's **thought signals** a compelling challenge facing current ethical inquiry: the effort to redescribe the moral self and...

12/3,K/3 (Item 2 from file: 35)
DIALOG(R) File 35:Dissertation Abs Online
(c) 2004 ProQuest Info&Learning. All rts. reserv.

805280 ORDER NO: AAD83-04275
DRIEU LA ROCHELLE, GRACQ, ABELLIO AND THE TRANSCENDENCE OF HISTORY (FRANCE)
Author: LINDER, LOIS JEAN
Degree: PH.D.
Year: 1982
Corporate Source/Institution: THE UNIVERSITY OF WISCONSIN - MADISON (0262)
Source: VOLUME 43/11-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3617. 315 PAGES

...to transcend History.
Chapter One situates the authors in the cultural milieu which nourishes their **thought**, signals their common background, their divergences. Chapter Two examines, in each text: the pattern of History...

12/3,K/4 (Item 1 from file: 233)
DIALOG(R)File 233:Internet & Personal Comp. Abs.
(c) 2003 EBSCO Pub. All rts. reserv.

00194584 89AN06-006
Doomed Can you survive three minutes in the death pit?
Barnes, Tony
Antic: The Atari Resource , June 1, 1989 , v8 n2 p18, 29-31, 3 Pages
ISSN: 0745-2527

...computers with 32K RAM, disk or cassette. The program lets the player 'kill' monsters with **mind waves** generated with the joystick. (djd)

12/3,K/5 (Item 1 from file: 483)
DIALOG(R)File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

06211951 SUPPLIER NUMBER: 63047278
Kasparov faces endgame: Bereft of fight or finesse, a once awesome world chess champion may lose his title today
Barden, Leonard
Guardian, p 1.28
Oct 31, 2000
ISSN: 0261-3077 NEWSPAPER CODE: MG
DOCUMENT TYPE: Feature; Newspaper article
LANGUAGE: English RECORD TYPE: ABSTRACT

...ABSTRACT: of his commanding presence at the board and one likened playing Kasparov to "bombardment by **thought waves**". Another described him as "a five-eyed monster who sees everything". He enjoyed psyching opponents...

12/3,K/6 (Item 2 from file: 483)
DIALOG(R)File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

06208997 SUPPLIER NUMBER: 63065971
Looking Oddly Like a Loser, Kasparov Trails in Chess Duel
Lyall, Sarah
New York Times, p A.6
Nov 1, 2000
ISSN: 0362-4331 NEWSPAPER CODE: NYT
DOCUMENT TYPE: News; Newspaper article
LANGUAGE: English RECORD TYPE: ABSTRACT

...ABSTRACT: used to -- the arrogant fighter whose style of attack was once described as "'bombardment by **thought waves**.' Confronted with Vladimir Kramnik, a Russian who now leads 8 points to 6 and is...

12/3,K/7 (Item 3 from file: 483)
DIALOG(R)File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

05874452 SUPPLIER NUMBER: 49232155
Pregnant Lisa Needs Seat--and Advocate

Levey, Bob
Washington Post, p C.10
Feb 7, 2000
ISSN: 0190-8286 NEWSPAPER CODE: WP
DOCUMENT TYPE: Commentary; Newspaper article
LANGUAGE: English RECORD TYPE: ABSTRACT

...ABSTRACT: to do in the first place." So she stands aboard the Orange Line and sends **mind - signals** to sitters. They "stare right at me, then look back down to their reading materials...

12/3,K/8 (Item 4 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

05398838
Bombayites Say They'll Never See A Stress Reducer Lovely as a Tree
Louis, Meera
Wall Street Journal, Sec B, p 1, col 1
Feb 1, 1999
ISSN: 0099-9660 NEWSPAPER CODE: WSJ
DOCUMENT TYPE: Feature; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Medium (6-18 col inches)

...ABSTRACT: metropolis who have started seeking refuge under trees. "If you meditate under your tree, your **thought waves** will be influenced by the positive energy flowing from the tree," says Uday Nadkarni, a...

12/3,K/9 (Item 5 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

00128817
Editorial Cartoon
Locher, Dick
Chicago Tribune, Sec 1, p 16, col 1
Apr 6, 1989
NEWSPAPER CODE: CT
DOCUMENT TYPE: Editorial Cartoon; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Short (0-6 col inches)

ABSTRACT: In an editorial cartoon Dick Locher depicts Gorbachev and Castro having separate **thought waves** while in Cuba for their recent summit conference.
?

16/3,K/1 (Item 1 from file: 8)
DIALOG(R) File 8:EI Compendex(R)
(c) 2004 Elsevier Eng. Info. Inc. All rts. reserv.

04671236 E.I. No: EIP97043625275

Title: High density method for the biomedical signal processing
Author: Kong, Fanrang; Xu, Guofang; Tang, Shuping; Cheng, Shaoduo
Corporate Source: The Univ of Sciences and Technology of China, Hefei,
China
Source: Zhongguo Shengwu Yixue Gongcheng Xuebao/Chinese Journal of
Biomedical Engineering v 15 n 4 Dec 1996. p 315-322
Publication Year: 1996
CODEN: ZSYXEI ISSN: 0258-8021
Language: Chinese

...Abstract: will be obtained. However, only 3K data can be displayed on
the screen of the **computer** by using **direct** display wave from method.
This paper is the first to propose a colour map technology...

...This paper discussed the colour map method in detail by discussing how
to process sleep **brain wave** signal. (Edited author abstract) 3 Refs.

Descriptors: Bioelectric phenomena; Biomedical engineering; **Signal**
processing; Electroencephalography; Mapping

16/3,K/2 (Item 1 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

05315998

Brain teaser Scientists are slowly unlocking the mysteries of the brain,
the mega-computer that powers all understanding. But what do we know
about its software, the mind? Tim Radford reveals how the biggest puzzle
of all is beginning to surrender its secrets and why this could
dramatically alter the way we live

Radford, Tim
Guardian, Sec 2, p 2, col 1
Nov 4, 1998
ISSN: 0261-3007 NEWSPAPER CODE: MG
DOCUMENT TYPE: News; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Long (18+ col inches)

...ABSTRACT: dead body. You could read a mind. Dramatic ideas like that
used to be called **brainwaves**. Not any more. Neuroscientists no longer
have **brainwaves**, they read them. Volunteer paraplegics with transponders
in their brain tissue have learned to 'think' **instructions** on to a
computer screen. Researchers have 'mapped' the place in the brain for
perfect pitch in musicians. With...

...the rest of the body, is a machine, a kind of neural network running on
electrical signals modulated by whole suites of chemical transmitters
and receptors. Drugs researchers have begun to understand...
?

17/3,K/1 (Item 1 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

04321852

Telepathic mouse promises an aura like science fiction
Kanell, Michael
Atlanta Journal Constitution, Sec P, p 2, col 1
Nov 24, 1996
NEWSPAPER CODE: ATCJ
DOCUMENT TYPE: News; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Long (18+ col inches)

ABSTRACT: News about new technology products is reported, including the Other 90%'s telepathic mouse called **MindDrive** that is an alternative to the computer mouse and fits on a finger.

PRODUCT/INDUSTRY NAMES: Other 90 Percent **MindDrive**

17/3,K/2 (Item 2 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

04297508

The latest way to surf the Net and play games is right at your fingertip
Malitz, Nancy
Detroit News, Sec G, p 3, col 5
Oct 24, 1996
ISSN: 1055-2715 NEWSPAPER CODE: DN
DOCUMENT TYPE: Product Review-Mixed; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Medium (6-18 col inches)

ABSTRACT: Nancy Malitz reviews the **MindDrive** software produced by The Other 90% Technologies.

PRODUCT/INDUSTRY NAMES: Other 90 Percent **MindDrive**

17/3,K/3 (Item 3 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

04242591

Mind Control for PC's? I Think Not
Manes, Stephen
New York Times, Sec C, p 7, col 1
Oct 1, 1996
ISSN: 0362-4331 NEWSPAPER CODE: NY
DOCUMENT TYPE: Product Review-Unfavorable; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Long (18+ col inches)

ABSTRACT: Stephen Manes reviews **Minddrive**, "the first computer product operated by human thought," by the Other 90% Technologies Inc.

PRODUCT/INDUSTRY NAMES: Other 90 Percent **MindDrive**

17/3,K/4 (Item 4 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

04222809

New home video games really play with thoughts, emotions
Haring, Bruce
USA TODAY, Sec D, p 5, col 4
Sep 18, 1996
ISSN: 0734-7456 NEWSPAPER CODE: US
DOCUMENT TYPE: News; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Medium (6-18 col inches)

ABSTRACT: The **MindDrive**, a product of The Other 90% Technologies that allows users to play computer games using...

17/3,K/5 (Item 5 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

04221055

Hey, kids, tell mom this game really makes you use your brain
Ziegler, Bart
Wall Street Journal, Sec B, p 1, col 1
Sep 18, 1996
ISSN: 0099-9660 NEWSPAPER CODE: WSJ
DOCUMENT TYPE: News; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Medium (6-18 col inches)

...ABSTRACT: to move on the screen on Sep 18, 1996, when a new computer game called **MindDrive** will appear in stores. By inserting one's index finger into a device resembling a...

17/3,K/6 (Item 6 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily
(c) 2004 ProQuest Info&Learning. All rts. reserv.

03832232

Six firms worth watching in '96--The Other 90%: A future based on brainpower
Schmit, Julie
USA TODAY, Sec B, p 3, col 1
Dec 26, 1995
ISSN: 0734-7456 NEWSPAPER CODE: US
DOCUMENT TYPE: Feature; Newspaper
LANGUAGE: English RECORD TYPE: ABSTRACT
LENGTH: Medium (6-18 col inches)

...ABSTRACT: by CEO Ron Gordon, The Other 90% is set to release in 1996 its product, **MindDrive**, which will be marketed as a fun, educational computer tool for kids.

17/3,K/7 (Item 7 from file: 483)
DIALOG(R) File 483:Newspaper Abs Daily

(c) 2004 ProQuest Info&Learning. All rts. reserv.

03594777

Marin investor bets on an impulse

Abate, Tom

San Francisco Chronicle, Sec B, p 1, col 4

Jul 2, 1995

NEWSPAPER CODE: SF

DOCUMENT TYPE: Feature; Newspaper

LANGUAGE: English RECORD TYPE: ABSTRACT

LENGTH: Long (18+ col inches)

ABSTRACT: Entrepreneur Ron Gordon is profiled regarding his invention, the **MindDrive**. To market the product, Gordon has formed The Other 90 Percent Inc. The **MindDrive** is a device that is worn on the finger and monitors galvanic skin response to...

17/3,K/8 (Item 8 from file: 483)

DIALOG(R)File 483:Newspaper Abs Daily

(c) 2004 ProQuest Info&Learning. All rts. reserv.

03567713

Thoughts drive this computer

San Francisco Chronicle, Sec B, p 8, col 4

Jun 16, 1995

NEWSPAPER CODE: SF

DOCUMENT TYPE: News; Newspaper

LANGUAGE: English RECORD TYPE: ABSTRACT

LENGTH: Short (0-6 col inches)

ABSTRACT: Ron Gordon will announce on Jun 16, 1995 a new technology called **MindDrive**, which allows the user to control a computer with thoughts by way of a sensor...

17/3,K/9 (Item 9 from file: 483)

DIALOG(R)File 483:Newspaper Abs Daily

(c) 2004 ProQuest Info&Learning. All rts. reserv.

03562503

Device that picks up brain signals lets you use a PC without moving

Clark, Don

Wall Street Journal, Sec B, p 3, col 1

Jun 16, 1995

ISSN: 0099-9660 NEWSPAPER CODE: WSJ

DOCUMENT TYPE: News; Newspaper

LANGUAGE: English RECORD TYPE: ABSTRACT

LENGTH: Medium (6-18 col inches)

...ABSTRACT: with an unusual technology for controlling PCs using signals from the nervous system. The device, **MindDrive**, uses a sensor that wraps around a user's finger to read electromagnetic signals generated...
?

File 256:SoftBase:Reviews,Companies&Prods. 82-2004/Apr
(c)2004 Info.Sources Inc

Set	Items	Description
S1	1	MINDDRIVE
S2	0	MINDSKIER OR MINDMUSIC OR MINDPOWERS OR MINDPINBALL OR MIN-DART
S3	0	(MIND OR THINKING OR THOUGHT) () (PULSE? OR SIGNAL? OR WAVES)
S4	8	BRAINWAVES OR (BRAIN OR THOUGHT) (3N) (WAVE?? OR PULSE?)
S5	1158	ELECTRIC(3N)WAVES OR PATTERNS
S6	728	(DIRECT? OR CONTROL? OR MANIPULAT? OR INSTRUCT? OR OPERAT?-) (3N) COMPUTER
S7	16	FINGER? (3N) (SENSOR? OR DETECTOR?)
S8	124	(BIOELECTRIC OR BIO() ELECTRIC OR ELECTRIC?) (3N) (PULSES OR - EMISSIONS OR SIGNAL?? OR IMPULSE?)
S9	5	(S4 OR S5 OR S7 OR S8) AND S6
S10	0	S6 AND S4
S11	0	S10 NOT S3
S12	5	S9 NOT S1

12/3,K/1

DIALOG(R) File 256:SoftBase:Reviews,Companies&Prods.
(c)2004 Info.Sources Inc. All rts. reserv.

01099562 DOCUMENT TYPE: Product

PRODUCT NAME: CyberWolf (099562)

CyberWolf Technologies (723002)
7115 Leesburg Pike #212
Falls Church, VA 22043 United States
TELEPHONE: (703) 538-1919

RECORD TYPE: Directory

CONTACT: Sales Department

REVISION DATE: 20020930

...computers, network devices, and intrusion detection sensors. It tracks and correlates multiple alerts, defining attack **patterns**. The system's scalable, distributed architecture supports event filtering across multiple enterprise systems. CyberWolf also...

DESCRIPTORS: **Computer Security; Data Center Operations ; Internet Security; Intrusion Detection; Network Administration; Network Software ; Sensors; System Monitoring; Vulnerability Scanners; WANs**

12/3,K/2

DIALOG(R) File 256:SoftBase:Reviews,Companies&Prods.
(c)2004 Info.Sources Inc. All rts. reserv.

01086436 DOCUMENT TYPE: Product

PRODUCT NAME: Unicenter Performance Management (086436)

Computer Associates International Inc (081957)
1 Computer Associates Plaza
Islandia, NY 11749 United States
TELEPHONE: (631) 342-6000

RECORD TYPE: Directory

CONTACT: Sales Department

REVISION DATE: 20020530

...error situations and deliver accurate problem prediction. In addition, Neugents technology can detect new behavioral **patterns**. If the system configuration is altered, these predictive agents can learn a new Personality Profile...

DESCRIPTORS: Capacity Planning; **Computer Diagnostics; Data Center Operations ; Load Balancing; Network Administration; Network Management ; Network Software; Neural Networks; Pattern Recognition; Performance Monitors; Software...**

12/3,K/3

DIALOG(R) File 256:SoftBase:Reviews,Companies&Prods.
(c)2004 Info.Sources Inc. All rts. reserv.

01086126 DOCUMENT TYPE: Product

PRODUCT NAME: eTrust Audit (086126)

Computer Associates International Inc (081957)
1 Computer Associates Plaza
Islandia, NY 11749 United States
TELEPHONE: (631) 342-6000

RECORD TYPE: Directory

CONTACT: Sales Department

REVISION DATE: 20020530

...common format, regardless of source. As a host-based intrusion detection tool, eTrust Audit assigns **patterns** to events so that actions can be automatically triggered based on the matched events. It...

DESCRIPTORS: Audit; Computer Security; Data Center Operations ;
Intrusion Detection; Network Administration; System Monitoring;
Vulnerability Scanners; WANs

12/3,K/4

DIALOG(R) File 256:SoftBase:Reviews,Companies&Prods.
(c)2004 Info.Sources Inc. All rts. reserv.

01014216 DOCUMENT TYPE: Product

PRODUCT NAME: XTRAN (014216)

Pennington Systems Inc (010219)
5 Independence Way #300
Princeton, NJ 08540 United States
TELEPHONE: (609) 919-0990

RECORD TYPE: Directory

CONTACT: Sales Department

REVISION DATE: 20030616

XTRAN from Pennington Systems is an expert system developed for symbolic manipulation of computer languages, including assembler through fourth generation programming languages, command languages, markup systems, and database languages...

...constructions. XTRAN's powerful rules language can also be employed to recognize common low-level **patterns** of source language usage and decompile them into higher-level target language constructions, as well...

12/3,K/5

DIALOG(R) File 256:SoftBase:Reviews,Companies&Prods.
(c)2004 Info.Sources Inc. All rts. reserv.

00115719 DOCUMENT TYPE: Review

PRODUCT NAMES: Artificial Intelligence (830217); User Interfaces (830287)

TITLE: Neural Interfaces Link the Mind and the Machine

AUTHOR: Charles, John

SOURCE: IEEE Computer, v32 n1 p16(3) Jan 1999

ISSN: 0018-9162

HOME PAGE: <http://computer.org/computer>

RECORD TYPE: Review

REVIEW TYPE: Product Analysis

GRADE: Product Analysis, No Rating

REVISION DATE: 20010228

A neural interface uses biological signals to control a computer, providing a seamless link between user and machine. The ultimate goal of the neural interface...

...to an analog-to-digital converter, and a DSP then extracts the relevant features and patterns in order to convert them into cursor commands. One patient, who was paralyzed by a...

?

File 348:EUROPEAN PATENTS 1978-2004/May W03
(c) 2004 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20040520, UT=20040513
(c) 2004 WIPO/Univentio

Set	Items	Description
S1	1	MINDDRIVE
S2	0	MINDSKIER OR MINDMUSIC OR MINDPOWERS OR MINDPINBALL OR MINDDART
S3	15	(MIND OR THINKING OR THOUGHT) () (PULSE? OR SIGNAL? OR WAVES)
S4	1713	BRAINWAVES OR (BRAIN OR THOUGHT) (3N) (WAVE?? OR PULSE? OR SIGNAL?)
S5	127456	ELECTRIC? (3N) WAVES OR PATTERNS
S6	95205	(DIRECT? OR CONTROL? OR MANIPULAT? OR INSTRUCT? OR OPERAT?-)(3N) COMPUTER
S7	2099	FINGER? (3N) (SENSOR? OR DETECTOR?)
S8	90414	(BIOELECTRIC OR BIO() ELECTRIC OR ELECTRIC?) (3N) (PULSES OR - EMISSIONS OR SIGNAL?? OR IMPULSE?)
S9	1125	(S3 OR S4 OR S5 OR S8) (10N) S6
S10	0	S9(10N) S7
S11	0	S6(5N) S3
S12	2	S6(5N) S4
S13	161	S6(5N) S5
S14	0	S13(10N) FINGER?
S15	0	S13(5N) (BRAIN OR MIND OR THINKING OR THOUGHT)
S16	373	S6(5N) S8
S17	0	S16(10N) S7

1/3,K/1 (Item 1 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2004 WIPO/Univentio. All rts. reserv.

00899528 **Image available**

SYSTEM FOR PROVIDING PERSONAL SECURITY VIA EVENT DETECTION

SYSTEME DE SECURITE PERSONNELLE REPOSANT SUR LA DETECTION D'EVENEMENTS

Patent Applicant/Inventor:

CALAMAN Gregory A, 21 Cleverdon Road, Ho-Ho-Kus, NJ 07423, US, US
(Residence), US (Nationality)

Legal Representative:

JACOBS Michael H (agent), Milbank, Tweed, Hadley & McCloy LLP,
International Square Building, 1825 Eye Street, N.W., Washington, DC
20006, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200233620 A1 20020425 (WO 0233620)

Application: WO 2001US29715 20010924 (PCT/WO US0129715)

Priority Application: US 2000690122 20001016

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ
DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG
SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 11668

Fulltext Availability:

Detailed Description

Detailed Description

... Preferably, the event sensor 1 10 is an electrogalvanic skin response sensor such as the **MindDrive** manufactured by The Other 90%, Inc. Electrogalvanic skin sensors use a technique called galvanic skin...

...the conductivity and electrical activity of the skin in order to sense physiological events. The **MindDrive** technology is capable of distinguishing between physiological signals generated by thoughts and signals generated by...

?

12/3,K/1 (Item 1 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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01043204 **Image available**

METHOD AND SYSTEM FOR AN INTELLIGENT SUPERVISORY CONTROL SYSTEM
PROCEDE ET SYSTEME RELATIFS A UN SYSTEME INTELLIGENT DE COMMANDE ET DE
SUPERVISION

Patent Applicant/Assignee:

ZYBERNETIX INC, 6938 Kensley Way, San Diego, CA 92126, US, US (Residence)
, US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

PINEDA Jaime A, 12682 Torrey Bluff Drive, #239, San Diego, CA 92130-4273,
US, US (Residence), -- (Nationality), (Designated only for: US)

ALLISON Brendan Z, 9321C Discovery Way, La Jolla, CA 92037, US, US
(Residence), -- (Nationality), (Designated only for: US)

Legal Representative:

LI Kam W (agent), Procopio, Cory, Hargreaves & Savitch LLP, Suite 2100,
530 B Street, San Diego, CA 92101, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200373175 A2 20030904 (WO 0373175)

Application: WO 2003US6077 20030226 (PCT/WO US0306077)

Priority Application: US 2002360153 20020226

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO
RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT SE SI
SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 5380

Fulltext Availability:

Detailed Description

Detailed Description

... as a substitute for the physiological human interaction with the environment, for example, using the **brain signal** to **operate** a **computer** keyboard, one's **control** over the resources of the environment is quite limited. It is also devoid of the...

12/3,K/2 (Item 2 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2004 WIPO/Univentio. All rts. reserv.

00767679 **Image available**

METHODS AND SYSTEMS FOR MATCHING INDIVIDUALS WITH BEHAVIORAL REQUIREMENTS
AND EVALUATING OR INCREASING INDIVIDUALS' CAPABILITIES
PROCEDES ET SYSTEMES PERMETTANT D'APPARIER DES PERSONNES AVEC DES EXIGENCES
DE COMPORTEMENT, D'EVALUER OU D'AMELIORER LES CAPACITES DE PERSONNES

Patent Applicant/Assignee:

ENHANCEMENT OF HUMAN POTENTIAL INC, 350 Cascade Drive, Fairfield, CT
06432, US, US (Residence), US (Nationality)

Inventor(s):

TAUB Herman P, 32 Lincoln Street, Westport, CT 06880, US

Legal Representative:

MARCOU George T, Kilpatrick Stockton LLP, Suite 800, 700 Thirteenth Street, N.W., Washington, DC 20005, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200101303 A1 20010104 (WO 0101303)

Application: WO 99US12822 19990628 (PCT/WO US9912822)

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 18787

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... according to the present invention an apparatus for unobtrusively obtaining data on an individual's **brain waves** associated with specific **computer operations** thus minimizing the effects of the data collection process on the operator's brain waves...an illustration of apparatuses for unobtrusively obtaining data on an individual's tension levels and **brain waves** associated with specific workstation or **computer operations**.

DETAELED DESCRIPTION OF TBE DRAWINGS

Although specific embodiments of the present invention will now be...

Claim

... SUBSTITUTE SHEET (RULE 26)

45 An apparatus for unobtrusively obtaining data on an individual's **brain waves** associated with specific **computer workstation operations**, comprising imbedding transducers into surfaces of a headband holding earphones to generate transcutaneous data suitable for processing into a determination of the location, shape and timing of **brain waves** simultaneous with such **computer or workstation operations**.

46 An algorithm to identify the relative stressor levels of mediated presentations, for the purpose...

?

File 344:Chinese Patents Abs Aug 1985-2004/Mar
(c) 2004 European Patent Office
File 347:JAPIO Nov 1976-2004/Jan(Updated 040506)
(c) 2004 JPO & JAPIO
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200432
(c) 2004 Thomson Derwent

Set	Items	Description
S1	0	MINDDRIVE
S2	0	MINDSKIER OR MINDMUSIC OR MINDPOWERS OR MINDPINBALL OR MINDDART
S3	3	(MIND OR THINKING OR THOUGHT) () (PULSE? OR SIGNAL? OR WAVES)
S4	1118	BRAINWAVES OR (BRAIN OR THOUGHT) (3N) (WAVE?? OR PULSE?)
S5	151440	ELECTRIC(3N)WAVES OR PATTERNS
S6	91391	(DIRECT? OR CONTROL? OR MANIPULAT? OR INSTRUCT? OR OPERAT?-) (3N) COMPUTER
S7	2204	FINGER? (3N) (SENSOR? OR DETECTOR?)
S8	128245	(BIOELECTRIC OR BIO() ELECTRIC OR ELECTRIC?) (3N) (PULSES OR - EMISSIONS OR SIGNAL?? OR IMPULSE?)
S9	2416	(S4 OR S5 OR S7 OR S8) AND S6
S10	19	S6 AND S4
S11	19	S10 NOT S3
S12	0	S11 AND S5
S13	0	S11 AND S7
S14	9	S11 AND S8
S15	1085	S6 AND S5
S16	30	S15 AND HUMAN
S17	2	S16 AND (SKIN OR FINGER?)
S18	2	S17 NOT (S14 OR S3)
S19	48	S6 AND S7
S20	0	S19 AND S8
S21	0	S19 AND (BRAIN OR THOUGHT OR THINKING)

3/3,K/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

016090646 **Image available**

WPI Acc No: 2004-248522/200423

XRPX Acc No: N04-197152

Thought wave communication apparatus, has receiver which detects electromagnetic wave in inorganic material as information signal, with differential transformer preventing interference

Patent Assignee: MIDDLEWAY GSH KK (MIDD-N); MIDDLE WAY GSH CO LTD (MIDD-N)

Inventor: HATANAKA T; MIYA K

Number of Countries: 105 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200423683	A2	20040318	WO 2003JP11260	A	20030903	200423 B
JP 2004104178	A	20040402	JP 2002259343	A	20020904	200424

Priority Applications (No Type Date): JP 2002259343 A 20020904

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200423683 A2 J 12 H04B-013/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

JP 2004104178 A 7 H04B-013/00

Abstract (Basic):

... A new form of communication is possible using extremely high frequency thought waves .

3/3,K/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

008883484 **Image available**

WPI Acc No: 1992-010753/199202

XRPX Acc No: N92-008248

Gravitational wave transmitter-receiver space telecommunication - detects waves which are transmitted via antenna, and allows recipient to receive signals using gravito-diode

Patent Assignee: PUYUELO J E H (PUYU-I)

Inventor: PUYUELO J E H

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
FR 2661295	A	19911025	FR 905175	A	19900419	199202 B

Priority Applications (No Type Date): FR 905175 A 19900419; FR 905175 A 19900419

...Abstract (Basic): The thought waves are picked up by a box 2-3cm dia. placed near the inner ear by...

...an integrated circuit receiver (37) and transmitter (38). The receiver contains a gravitational diode (44). Thought waves are transmitted via the antenna, and other persons thoughts received thoughts passed back through it...

...USE/ADVANTAGE - For transmitting thought waves as in telepathy and psychoanalysis. Thoughts can be received and transmitted through space. (7pp Dwg...)

3/3,K/3 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

007380609

WPI Acc No: 1988-014544/198803

XRPX Acc No: N88-010845

Infrared image eye transceiver de modulator - has VDU which receives thought waves emitted by brain and transforms them into usual signals

Patent Assignee: SZEWCOW P (SZEW-I)

Inventor: SZEWCOW P

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
AU 8657682	A	19871126	AU 8657682	A	19860522	198803 B

Priority Applications (No Type Date): AU 8657682 A 19860522

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
AU 8657682	A		2		

... has VDU which receives thought waves emitted by brain and transforms them into usual signals

...Abstract (Basic): does not require the use of external electrical energy to run it. The VDU receives thought waves emitted by the brain and transforms them into visual signals...

?

14/3,K/1 (Item 1 from file: 347)
DIALOG(R) File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.

07297570 **Image available**
METHOD OF COMPUTER GAME USING BIO FEED BACK OF BRAIN WAVE AND ITS APPARATUS

PUB. NO.: 2002-166050 [JP 2002166050 A]
PUBLISHED: June 11, 2002 (20020611)
INVENTOR(s): ONISHI HIDENORI
APPLICANT(s): TECHNOS JAPAN KK
APPL. NO.: 2000-369863 [JP 2000369863]
FILED: December 05, 2000 (20001205)

METHOD OF COMPUTER GAME USING BIO FEED BACK OF BRAIN WAVE AND ITS APPARATUS

ABSTRACT

... a method to obtain an agreement between a person's intension and his or her **brain wave** and to provide an apparatus which uses this method for the **operation** of a **computer** and a game machine.

SOLUTION: Using a correlation between the state of consciousness and the spectrum level of **brain wave**, a correspondence is given between a person's intension and an **electric signal** converted from his or her **brain wave**. By doing this, an **electric signal** which can be intentionally **controlled** is obtained. A **computer** or a game machine is operated through the **electric signal**. Furthermore, the apparatus using **brain wave** as an **electric signal** is realized by using an application driver consisting of a software as a means to...

14/3,K/2 (Item 2 from file: 347)
DIALOG(R) File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.

05675175 **Image available**
PATIENT MONITORING DEVICE

PUB. NO.: 09-289975 [JP 9289975 A]
PUBLISHED: November 11, 1997 (19971111)
INVENTOR(s): IKEDA KAZUHIRO
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 08-107583 [JP 96107583]
FILED: April 26, 1996 (19960426)

ABSTRACT

... converter or the like and the plural sensors respectively convert the biological phenomena such as **pulse**, respiration, **brain wave**, muscular current, body temperature and blood pressure to **electric signals**. A control part 18 is composed of plural IC with a microcomputer as a center, for example, and various kinds of functions are provided by a **computer program**. Besides, the **control** part 18 displays the most important biological signal on a flat panel display 12 and...

14/3,K/3 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

015322814 **Image available**

WPI Acc No: 2003-383749/200337

XRAM Acc No: C03-102153

XRPX Acc No: N03-306523

Drug dispensing appliance for dispensing therapeutic drug to patient, includes controller for executing stored computer program, therapeutic reservoir, data network interface, and patient parameter sensors

Patent Assignee: HEWLETT-PACKARD CO (HEWP); GREEVEN J (GREE-I); GREEVEN M D (GREE-I)

Inventor: GREEVEN J; GREEVEN M D

Number of Countries: 032 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1291802	A2	20030312	EP 2002256041	A	20020830	200337 B
CA 2399773	A1	20030307	CA 2399773	A	20020826	200337
US 20030050730	A1	20030313	US 2001949049	A	20010907	200337

Priority Applications (No Type Date): US 2001949049 A 20010907

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 1291802 A2 E 13 G06F-019/00

Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR

CA 2399773 A1 E A61J-007/04

US 20030050730 A1 G06F-017/00

Drug dispensing appliance for dispensing therapeutic drug to patient, includes controller for executing stored computer program, therapeutic reservoir, data network interface, and patient parameter sensors

Abstract (Basic):

... coupled to the controller. The therapeutic drugs can be dispensed from the reservoir under the control of the stored computer program and patient treatment information sent and received via the data network interface...

...An INDEPENDENT CLAIM is included for a method of dispensing a pharmaceutical by sensing an electrical signal of a physical condition of a patient, measuring the first electrical signal using the above appliance, and dispensing a therapeutic drug to the patient in response to...

Technology Focus:

... conditions includes blood pressure, heart rate, temperature of the patient, blood sugar of the patient, brain wave activity of a patient, allergens, or patient weight.

14/3,K/4 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014695779 **Image available**

WPI Acc No: 2002-516483/200255

Multi-player game system applying bio-signal of gamer to game performance ability and operating method thereof

Patent Assignee: UZ DREAM CO LTD (UZDR-N)

Inventor: PARK T R

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
KR 2002009119	A	20020201	KR 200042472	A	20000724	200255 B

Priority Applications (No Type Date): KR 200042472 A 20000724

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
KR 2002009119	A		1	G06F-017/60	

Abstract (Basic):

... The multi-player game system includes many gamer computers(10) and an **operator computer** (20) providing a game lobby. The gamer computers connected with the **operator computer** via the Internet(I). The gamer computers are **electrically** connected with bio- **signal** sensing units(15) attached to the bodies of gamers. Such a bio-signal sensing unit...

...attached to the fingers or the earlobes to measure at least one of an electrocardiogram, **pulse**, temperature and a **brain wave** of the corresponding gamer. The gamers connect to the game lobby and join in the...

14/3,K/5 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014638301 **Image available**

WPI Acc No: 2002-459005/200249

XRPX Acc No: N02-362104

Brain wave **detection method for operating electronic device, involves applying electrical signal obtained by converting brain wave detected with biofeedback system, to electronic device**

Patent Assignee: TECHNOS JAPAN KK (TECH-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002125945	A	20020508	JP 2000323572	A	20001024	200249 B

Priority Applications (No Type Date): JP 2000323572 A 20001024

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002125945	A		7	A61B-005/0476	

Brain wave **detection method for operating electronic device, involves applying electrical signal obtained by converting brain wave detected with biofeedback system, to electronic device**

Abstract (Basic):

... The **brain wave** detected with a biofeedback system, is converted into an **electrical control signal**. The correlation of person's consciousness with variation of the **brain wave** is applied, using which an electronic device and a **computer** are **operated**.

... An INDEPENDENT CLAIM is included for **brain wave** detection device...

...For detecting **brain wave** for handicapped people for **operating** electronic devices, **computer**, and machinery, etc...

...The figure shows a block diagram of brain wave detection system.
(Drawing includes non-English language text...)

14/3,K/6 (Item 4 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

011775472 **Image available**
WPI Acc No: 1998-192382/199817
Related WPI Acc No: 1994-091943; 1995-319597
XRPX Acc No: N98-152277

Neurocognitive adaptive computer aided training method - involves automatically adjusting portion of learning program being run by computer if trainee's on-line neurocognitive scores of focused attention are predetermined amount below or above threshold value

Patent Assignee: SAM TECHNOLOGY INC (SAMT-N)
Inventor: GEVINS A; LEONG H; SAM-VARGAS I; SMITH M
Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5724987	A	19980310	US 91766826	A	19910926	199817 B
			US 94183621	A	19940119	
			US 95504653	A	19950720	

Priority Applications (No Type Date): US 95504653 A 19950720; US 91766826 A 19910926; US 94183621 A 19940119

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5724987	A	26	A61B-005/0476	CIP of application US 91766826	
				CIP of application US 94183621	
				CIP of patent US 5295491	
				CIP of patent US 5447166	

...Abstract (Basic): method involves presenting a trainee with a battery of learning tasks in which the trainee operates the computer using a muscle operated computer input control device. The brain waves of the trainee are detected and analysed with an EEG device with at least one...

...ADVANTAGE - Uses real-time measurement of brain electrical signals to measure trainee's degree of focused attention...

14/3,K/7 (Item 5 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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010418282 **Image available**
WPI Acc No: 1995-319597/199541
Related WPI Acc No: 1994-091943; 1998-192382
XRPX Acc No: N95-240378

Neuro-cognitive adaptive computer interface method for computer aided instruction - using neuro-electric signals from user's scalp i.e. electroencephalograms to alter program being run e.g. in terms of lesson difficulty

Patent Assignee: GEVINS A S (GEVI-I)
Inventor: GEVINS A S
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5447166	A	19950905	US 91766826	A	19910926	199541 B
			US 94183621	A	19940119	

Priority Applications (No Type Date): US 94183621 A 19940119; US 91766826 A 19910926

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5447166	A	20	A61B-005/0476	CIP of application US 91766826 CIP of patent US 5295491	

Neuro-cognitive adaptive computer interface method for computer aided instruction - ...

...using neuro-electric signals from user's scalp i.e. electroencephalograms to alter program being run e.g. in

...Abstract (Basic): battery of standard tasks and, while the user performs the tasks, detecting and analyzing the brain waves of the user with an EEG (electroencephalograph) device having a number of electrodes removably connected...

...The user operates the computer system using the computer system muscle operated input controller. The brain waves of the user are detected and analysed with an EEG (electroencephalograph) device having a number...

14/3,K/8 (Item 6 from file: 350)

DIALOG(R) File 350:Derwent WPIX
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008115096 **Image available**
WPI Acc No: 1990-002097/199001

XRPX Acc No: N90-001492

Brain - wave controlled computer interface - has electrodes on head feeding cerebral spectra to amplifiers, filters and A-D converters so frequencies control computer

Patent Assignee: EDWARDS B (EDWA-I)

Inventor: EDWARDS B

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
GB 2220089	A	19891228	GB 8814501	A	19880617	199001 B

Priority Applications (No Type Date): GB 8814501 A 19880617

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2220089	A	20			

Brain - wave controlled computer interface...

...electrodes on head feeding cerebral spectra to amplifiers, filters and A-D converters so frequencies control computer

...Abstract (Basic): A brain Wave Controlled Computer Interface enables an individual to communicate messages to a computer by means of that individual...

...stage (4). Electrodes or sensors can be attached to the head, and these

sensors feed **electrical signals** into amplifiers and filtering circuits similar to those used in normal EEG machines...

14/3,K/9 (Item 7 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

002174153

WPI Acc No: 1979-K4101B/197944

Brain - wave **data distortion prevention system** - uses set of electrodes placed diagonally above and below patient's eye to detect signals arising from eye movement

Patent Assignee: JOHN E R (JOHN-I)

Inventor: JOHN E R

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4171696	A	19791023				197944 B

Priority Applications (No Type Date): US 78873119 A 19780130

Brain - wave **data distortion prevention system**...

...Abstract (Basic): The system uses one set of electrodes which detect **brain - waves** and produce a corresp. **electrical signal**, and another set which detects signals resulting from eye and head movements. A computer monitors...

...Each channel of **brain waves** and artifact signals, converted into digital information, are compared with a threshold selected digital value set by the **operator**. The **computer**, after determining that there exists a movement artifact, i.e. an artifact in excess of the digital threshold value, either blanks out the **brain wave** data for that period or magnetically "marks" the appropriate channel(s) of the multi-channel...

?

18/3,K/1 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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015042821
WPI Acc No: 2003-103337/200309
XRAM Acc No: C03-026044
XRPX Acc No: N03-082545

Novel polynucleic acid segment useful for modulating gene expression within a cell by posttranscriptional gene silencing, and for augmenting a plant cell genome

Patent Assignee: FRIEDRICH MIESCHER INST (FRIE-N); SYNGENTA PARTICIPATIONS AG (SYGN)

Inventor: CHANG H; GLAZOV E A; MEINS F; WANG X; ZHUT T

Number of Countries: 100 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200281695	A2	20021017	WO 2002EP3806	A	20020405	200309 B

Priority Applications (No Type Date): US 2001282049 P 20010406

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200281695	A2	E	438	C12N-015/29	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

Abstract (Basic):

... 23) a computer-readable medium having stored on it, computer executable instructions for receiving a nucleic acid sequence having 70% nucleic acid sequence identity to a nucleic...the consumer of the grain harvested from the plant (e.g. improved nutritive content in human food or animal feed, increased vitamin, amino acid, and antioxidant content, the production of antibodies...

Technology Focus:

... PTGS and the cell not having PTGS. The amplified fragment length polymorphism, differential display, cDNA fingerprinting, reverse genetics or mass spectroscopy is used to compare the products expressed by the cell...

Extension Abstract:

... Producing transgenic non- human animal models in which PTGS is present or PTGS is inactivated, is also disclosed...

...by posttranscriptional gene silencing (PTGS) was identified. DNA microarray technology was used to compare expression patterns of RNA in silent and high-expression tissues of well-characterized 35S-green fluorescent protein (GFP) Arabidopsis lines. Two transgenic lines were generated using p35S-GFP. RNA expression patterns were determined by comparison of replicate RNA samples from different pairs of high-expressing and silent leaves in comparable physiological and developmental states. RNA expression patterns were also compared from samples obtained from tissue harvested at different times in the silencing...

18/3,K/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX
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004044614

WPI Acc No: 1984-190156/198431

Related WPI Acc No: 1984-190148; 1984-197178; 1984-289597; 1988-355026;
1989-070249; 1989-309234; 1990-131979; 1990-178592; 1991-094489;
1991-109625; 1991-339398; 1991-361655; 1992-234197; 1993-066660;
1994-065172; 1995-066617

XRPX Acc No: N84-142123

Touch sensitive calculator or telephone keyboard - has keys arranged to allow simultaneous operation of several keys by single finger stroke

Patent Assignee: LAITRAM CORP (LAIT)

Inventor: LAPEYRE J M

Number of Countries: 010 Number of Patents: 017

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3401976	A	19840726	DE 3401976	A	19840120	198431 B
GB 2133745	A	19840801	GB 84798	A	19840112	198431
GB 2134042	A	19840808	GB 84797	A	19840112	198432
FR 2539894	A	19840727				198435
FR 2539895	A	19840727				198435
JP 59140547	A	19840811	JP 83252406	A	19831224	198438
GB 2149946	A	19850619	GB 8430587	A	19841204	198525
GB 2134042	B	19860102	GB 8430587	A	19840112	198601
CA 1213067	A	19861021				198647
CA 1213987	A	19861112				198650
CA 1221465	A	19870505				198722
GB 2149946	B	19870715				198728
GB 2133745	B	19870722				198729
CA 1224737	A	19870728				198734
US 4891777	A	19900102	US 86862647	A	19860513	199009
US 4994992	A	19910219	US 89327422	A	19890321	199110
IT 1221795	B	19900712				199217

Priority Applications (No Type Date): US 83459998 A 19830121; US 83488692 A
19830426; US 83493613 A 19830511; US 83528975 A 19830902; US 86862647 A
19860513

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 3401976	A		38		

... has keys arranged to allow simultaneous operation of several keys by single finger stroke

...Abstract (Basic): that each key of the group is actuatable independently of the others by a single **fingerstroke**, so that each pair of adjacent keys of the group is actuatable simultaneously and independently of the other keys of the group by a single **fingerstroke**, and so that the keys of at least two sub-groups of three keys of...

...are actuatable simultaneously and independently of the other key of the group by a single **fingerstroke** applied to the intersection, wherein each key of the group is coupled to a decoding...

...are positioned relative to one another so that they can be operated by three different **fingers** and partially overlap to allow them to be operated simultaneously by a single **finger** stroke...

...Abstract (Equivalent): that each key of the group is actuatable independently of the others by a single **fingerstroke**, so that each

pair of adjacent keys of the group is actuatable simultaneously and independently of the other keys of the group by a single **fingerstroke**, and so that the keys of at least two sub-groups of three keys of...

...are actuatable simultaneously and independently of the other key of the group by a single **fingerstroke** applied to the intersection, wherein each key of the group is coupled to a decoding...

...switches independently and multiplicities of side-by-side keyswitches concurrently bridgeable for actuation by one **finger** characterised in that tactile feedback markers sensed by a single **finger** to determine **finger** stroke registration positions for entry of a desired keyswitch signal extend over a plurality of...

...of y keys (y equal to or greater than 4) arranged for access by the **fingers** of a single hand for touch-typing style of data entry, means responsive to a stroke of a single **finger** applied to one or more of said keys to enter coded information to the computer...

...actuated thereby providing a plurality of x selections exceeding three times y, means in the **computer** system to **operate** in a data entry mode with both alphabetic and numeric data and to enter both...

...computer system responsive to the coded information from said array of keys to provide a **computer operation** mode with a plurality of operational choices, and means providing a further keyboard operation mode...

...Abstract (Equivalent): keys are arranged for one-hand touch typing in alphanumeric data processors permit a single **finger** to choose either single keys or multiplicities of side-by-side keys to give enough selection for alpha processing and to arrange keys conveniently about the **fingers** for touch typing. Tactile feedback structural **patterns** including indentations and raised surface portions identify single keys and intersections of two and three keys where the **finger** strokes occur...

...lay-out permits touch typing with one hand where twelve keys provides full alphanumeric capabilities. **Finger** positions conform with **human** hand structure and include raised ridges for identifying some of the **fingerstroke** key selection locations...

...As few as four keys and four wires can afford fourteen manual selections by single **finger**. (20pp)

...Title Terms: **FINGER** ;

?

File 5:Biosis Previews(R) 1969-2004/May W3
(c) 2004 BIOSIS
File 73:EMBASE 1974-2004/May W3
(c) 2004 Elsevier Science B.V.
File 155:MEDLINE(R) 1966-2004/May W3
(c) format only 2004 The Dialog Corp.
File 172:EMBASE Alert 2004/May W2
(c) 2004 Elsevier Science B.V.
File 188:Health Devices Sourcebook 2002
ECRI (A nonprofit agency)
File 198:Health Devices Alerts(R) 1977-2004/May W4
(c) 2004 ECRI-nonprft agncy

Set	Items	Description
S1	0	MINDDRIVE
S2	0	MINDSKIER OR MINDMUSIC OR MINDPOWERS OR MINDPINBALL OR MIN-DART
S3	1	(MIND OR THINKING OR THOUGHT) () (PULSE? OR SIGNAL? OR WAVES)
S4	3132	BRAINWAVES OR (BRAIN OR THOUGHT) (3N) (WAVE?? OR PULSE?)
S5	717046	ELECTRIC(3N)WAVES OR PATTERNS
S6	31286	(DIRECT? OR CONTROL? OR MANIPULAT? OR INSTRUCT? OR OPERAT?-) (3N) COMPUTER
S7	782	FINGER?(3N) (SENSOR? OR DETECTOR?)
S8	10163	(BIOELECTRIC OR BIO() ELECTRIC OR ELECTRIC?) (3N) (PULSES OR - EMISSIONS OR SIGNAL?? OR IMPULSE?)
S9	1095	(S4 OR S5 OR S7 OR S8) AND S6
S10	9	S6 AND S4
S11	9	S10 NOT S3
S12	8	RD S11 (unique items)
S13	3	S7 AND S6
S14	3	S13 NOT (S3 OR S10)
S15	2	RD S14 (unique items)
S16	719912	S4 OR S5
S17	1037	S16 AND S6
S18	7	S17 AND FINGER? AND SENSOR?
S19	7	S18 NOT (S13 OR S3 OR S10)
S20	6	RD S19 (unique items)

3/3,K/1 (Item 1 from file: 73)

DIALOG(R) File 73:EMBASE

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12460872 EMBASE No: 2004056585

Relevance of unjustified strong assumptions when utilizing signal detection theory

Nelson T.O.

T.O. Nelson, Psychology Department, University of Maryland, College Park,
MD 20742 United States

AUTHOR EMAIL: tnelson@glue.umd.edu

Behavioral and Brain Sciences (BEHAV. BRAIN SCI.) (United Kingdom)
2003, 26/3 (351)

CODEN: BBSCD ISSN: 0140-525X

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

MEDICAL DESCRIPTORS:

psychological theory; mental performance; cognition; mental task; task performance; mathematical computing; thinking ; signal noise ratio ; human; nonhuman; article

?

12/3,K/1 (Item 1 from file: 5)
DIALOG(R) File 5:Biosis Previews(R)
(c) 2004 BIOSIS. All rts. reserv.

0011764905 BIOSIS NO.: 199900024565
Mining multi-channel EEG for its information content: An ANN-based method for a brain-computer interface

AUTHOR: Peters Bjorn O (Reprint); Pfurtscheller Gert; Flyvbjerg Henrik
AUTHOR ADDRESS: Hoechstleistungsrechenzentrum, Forschungszent., D-52425
Juelich, Germany**Germany

JOURNAL: Neural Networks 11 (7-8): p1429-1433 Oct.-Nov., 1998 1998

MEDIUM: print

ISSN: 0893-6080

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: classifier suitable for a so-called 'Brain-Computer Interface', a system that allows one to control a computer, or another device, with ones brain waves. Our classifier Laplace filters the EEG spatially, but makes use of its entire frequency range...

12/3,K/2 (Item 1 from file: 73)

DIALOG(R) File 73:EMBASE
(c) 2004 Elsevier Science B.V. All rts. reserv.

06763115 EMBASE No: 1997044606

High density method for the biomedical signal processing

Kong F.; Xu G.

F. Kong, Dept. of Precision Instrumentation, Univ. of Sciences/Technol.
of China, Hefei 230026 China

Chinese Journal of Biomedical Engineering (CHIN. J. BIOMED. ENG.) (China) 1996, 15/4 (315-322+381)

CODEN: ZSYXE ISSN: 0258-8021

DOCUMENT TYPE: Journal; Article

LANGUAGE: CHINESE SUMMARY LANGUAGE: ENGLISH; CHINESE

NUMBER OF REFERENCES: 3

...data will be obtained. Only 3K data can be displayed on the screen of the computer by using direct display wave form method. This paper first developed a colour map technology. The information displayed...

...This paper discussed the colour map method in detail by discussing how to process sleep brain wave signal.

12/3,K/3 (Item 2 from file: 73)

DIALOG(R) File 73:EMBASE
(c) 2004 Elsevier Science B.V. All rts. reserv.

06488639 EMBASE No: 1996154680

A computerized method of somatosensory evoked potentials monitoring: II. Advantage of the model for neuropathy studies in experimental diabetes

Bjegovic M.; Isgum V.; Slijepcevic M.

'Ruder Boskovic' Institute, Bijenicka 54,10000 Zagreb Croatia

Periodicum Biologorum (PERIOD. BIOL.) (Croatia) 1996, 98/1 (49-53)

CODEN: PDBIA ISSN: 0031-5362

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...resulated in marked amplitude increase and slight latency prolongation of P22 component in the SEPs brain wave complex, accompanied by the 75% reduction of N27 amplitude peak. Slight latency increase was seen...

MEDICAL DESCRIPTORS:

alloxan diabetes mellitus; animal experiment; animal model; article; computer analysis; computer program; controlled study; electroencephalogram; female; hyperglycemia; male; monitoring; mouse; nonhuman; rat

12/3,K/4 (Item 3 from file: 73)

DIALOG(R) File 73:EMBASE

(c) 2004 Elsevier Science B.V. All rts. reserv.

06361524 EMBASE No: 1996025192

A computorized method of somatosensory evoked potentials monitoring: I. Some characteristics of the model in healthy and diabetic rodents

Bjegovic M.; Isgum V.; Slijepcevic M.

Ruder Boskovic Institute, Dept. of Biology and Medicine, Bijenicka
54,10000 Zagreb Croatia

Periodicum Biologorum (PERIOD. BIOL.) (Croatia) 1995, 97/4 (295-300)

CODEN: PDBIA ISSN: 0031-5362

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...female rats and C3H mice point to significant enlargement of amplitudes of early and later brain waves in mice. Latency prolongation and amplitude differences in diabetic mice (CBA) versus control were observed...

MEDICAL DESCRIPTORS:

animal experiment; article; computer program; controlled study; female; information processing; male; mouse; nonhuman; rat

12/3,K/5 (Item 4 from file: 73)

DIALOG(R) File 73:EMBASE

(c) 2004 Elsevier Science B.V. All rts. reserv.

04021359 EMBASE No: 1989190401

Abnormal brain-stem function (brain-stem auditory evoked response) correlates with acoustic cry features in term infants with hyperbilirubinemia

Vohr B.R.; Lester B.; Rapisardi G.; O'Dea C.; Brown L.; Peucker M.; Cashore W.; Oh W.

Neonatal Follow-up Clinic, Women and Infants' Hospital of Rhode Island, Providence, RI 02905 United States

Journal of Pediatrics (J. PEDIATR.) (United States) 1989, 115/2 (303-308)

CODEN: JOPDA ISSN: 0022-3476

DOCUMENT TYPE: Journal

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...the interpeak of waves latencies I to III ($r = 0.32$, $p < 0.03$) and brain -stem conduction time (wave I to V) ($r = 0.35$, $p < 0.01$). We conclude that hyperbilirubinemia affects adjoining...

MEDICAL DESCRIPTORS:

computer analysis; controlled study; clinical article; human; priority journal

12/3,K/6 (Item 5 from file: 73)

DIALOG(R) File 73:EMBASE

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03699571 EMBASE No: 1988149007

Toward a functional categorization of slow waves

Ruchkin D.S.; Johnson Jr. R.; Mahaffey D.; Sutton S.

Department of Physiology, School of Medicine, University of Maryland,
Baltimore, MD 21201 United States

Psychophysiology (PSYCHOPHYSIOLOGY) (United States) 1988, 25/3
(339-353)

CODEN: PSPHA ISSN: 0048-5772

DOCUMENT TYPE: Journal

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

MEDICAL DESCRIPTORS:

*arithmetic; *evoked response; *information processing; *pattern
recognition; *slow brain wave
computer analysis; controlled study; clinical article; human experiment
; normal human; male; female

12/3,K/7 (Item 6 from file: 73)

DIALOG(R) File 73:EMBASE

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02383929 EMBASE No: 1983152940

**Moderate carbon monoxide exposure during sleep: neuro- and
psychophysiological effects in young and elderly people**

Groll Knapp E.; Haider M.; Jenkner H.; et al.

Inst. Environ. Health, Univ. Vienna, A-1095 Vienna Austria

Neurobehavioral Toxicology and Teratology (NEUROBEHAV. TOXICOL. TERATOL.
) (United States) 1982, 4/6 (709-716)

CODEN: NETOD

DOCUMENT TYPE: Journal

LANGUAGE: ENGLISH

In order to assess age-related effects of carbon monoxide (CO) on **brain**
wave -activity and sleep, auditory evoked potentials (AEP) were measured
during sleep in 10 healthy young...

MEDICAL DESCRIPTORS:

rem sleep; volunteer; normal human; intoxication; nervous system;
peripheral nervous system; **controlled study; human experiment; computer**
analysis; human; central nervous system; auditory system; blood and
hemopoietic system

12/3,K/8 (Item 1 from file: 155)

DIALOG(R) File 155: MEDLINE(R)

(c) format only 2004 The Dialog Corp. All rts. reserv.

08456886 PMID: 2178599 Record Identifier: 90179653

**Therapeutic effects of antimotion sickness medications on the secondary
symptoms of motion sickness.**

Wood C D; Stewart J J; Wood M J; Manno J E; Manno B R; Mims M E

Louisiana State University Medical Center, Department of Pharmacology,
Shreveport 71130-3932.

Aviation, space, and environmental medicine (UNITED STATES) Feb 1990,
61 (2) p157-61, ISSN 0095-6562 Journal Code: 7501714

Document type: Clinical Trial; Journal Article; Randomized Controlled Trial
Languages: ENGLISH
Main Citation Owner: NLM
Other Citation Owner: NASA
Record type: Completed

In addition to nausea and vomiting, motion sickness involves slowing of **brain waves**, loss of performance, inhibition of gastric motility and the Sopite Syndrome. The therapeutic effects of...

... then administered. Side effects before and after rotation were reported on the Cornell Medical Index. **Brain waves** were recorded on a Grass Model 6 Electroencephalograph (EEG), and gastric emptying was studied after ...

... scopolamine had an additive effect. Alterations of performance on the pursuit meter correlated with the **brain wave** changes. Gastric emptying was restored by IM metoclopramide. Ephedrine IM but not scopolamine is effective...

; Adolescent; Adult; Dose-Response Relationship, Drug; Drug Therapy, Combination; Randomized **Controlled Trials**; Signal Processing, Computer-Assisted; Syndrome
?

15/3,K/1 (Item 1 from file: 73)

DIALOG(R) File 73:EMBASE

(c) 2004 Elsevier Science B.V. All rts. reserv.

07714501 EMBASE No: 1999206852

A biomimetic controller for a multifinger prosthesis

Abboudi R.L.; Glass C.A.; Newby N.A.; Flint J.A.; Craelius W.

R.L. Abboudi, Department of Biomedical Engineering, Orthotic and Prosthetic Laboratory, Rutgers University, Piscataway, NJ 08854 United States

IEEE Transactions on Rehabilitation Engineering (IEEE TRANS. REHABIL. ENG.) (United States) 1999, 7/2 (121-129)

CODEN: IEERE ISSN: 1063-6528

PUBLISHER ITEM IDENTIFIER: S1063652899044687

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 24

...and tested to measure its accuracy and performance in transducing volitional signals for individual 'phantom' **fingers**. Pneumatic **sensors** were fabricated from open-cell polymeric foam, and were interposed between the prosthetic socket and...

...or combinations thereof to execute either taps or grasps. Sensor outputs were processed by a **computer** that **controlled** motions of individual fingers on a mechanical prosthesis. Trials on three upper-limb amputees showed...

15/3,K/2 (Item 1 from file: 155)

DIALOG(R) File 155: MEDLINE(R)

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09462978 PMID: 1401790

An Automated Tactile Tester for evaluation of cutaneous sensibility.

Horch K; Hardy M; Jimenez S; Jabaley M

St. Dominic Hand Center, Jackson, Miss.

Journal of hand surgery (UNITED STATES) Sep 1992, 17 (5) p829-37,
ISSN 0363-5023 Journal Code: 7609631

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

The Automated Tactile Tester (ATT) is a **computer - controlled** device designed to measure patients' cutaneous perception of touch, vibration, temperature, and pain. The ATT...

; Adolescent; Adult; Aged; Child; **Fingers** ; Middle Aged; **Sensory Thresholds**; Temperature; Touch; Vibration
?

20/3,K/1 (Item 1 from file: 73)

DIALOG(R) File 73:EMBASE

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12211272 EMBASE No: 2003313127

Comparison of linear, nonlinear, and feature selection methods for EEG signal classification

Garrett D.; Peterson D.A.; Anderson C.W.; Thaut M.H.

United States

AUTHOR EMAIL: deong@acm.org

IEEE Transactions on Neural Systems and Rehabilitation Engineering (IEEE TRANS. NEURAL SYST. REHABIL. ENG.) (United States) 2003, 11/2 (141-144)

CODEN: ITNSB ISSN: 1534-4320

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 25

The reliable **operation** of brain- computer interfaces (BCIs) based on spontaneous electroencephalogram (EEG) signals requires accurate classification of multichannel EEG. The...

...open research questions whose difficulty stems from the need to extract complex spatial and temporal **patterns** from noisy multidimensional time series obtained from EEG measurements. The high-dimensional and noisy nature...

...based on genetic algorithms is also presented with preliminary results of application to EEG during **finger** movement.

MEDICAL DESCRIPTORS:

analytic method; multichannel recorder; nerve cell network; discriminant analysis; algorithm; pattern recognition; task performance; **sensorimotor** cortex; comparative study; article; priority journal

20/3,K/2 (Item 2 from file: 73)

DIALOG(R) File 73:EMBASE

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06669768 EMBASE No: 1996334671

New method for early rehabilitation in extremities palsies of central origin by magnetic stimulation

EINE NEUE METHODE ZUR FRUHREHABILITATION ZENTRALBEDINGTER LAHMUNGEN VON ARM UND HAND MITTELS MAGNETSTIMULATION

Struppner A.; Jakob C.; Muller-Barna P.; Schmid M.; Lorenzen H.-W.;

Paulig M.; Prosiegel M.

Klinikum Rechts der Isar (TU), Ismaninger Str. 22, 81675 Munchen Germany
EEG-EMG Zeitschrift fur Elektroenzephalographie Elektromyographie und Verwandte Gebiete (EEG-EMG Z. ELEKTROENZEPHALOGR. ELEKTROMYOGR. VERW. GEB.) (Germany) 1996, 27/3 (151-157)

CODEN: EEEGA ISSN: 0012-7590

DOCUMENT TYPE: Journal; Article

LANGUAGE: GERMAN SUMMARY LANGUAGE: GERMAN; ENGLISH

Recent functional and morphological investigations have shown, that the **sensorimotor** cortex has a remarkable capability to modulate his excitability when the **sensory** inflow is diminished. In central paresis, as a consequence of the loss of movement, the...

...muscles, the associated proprioceptive inflow is much higher and

corresponds closer to the voluntary action **patterns**. Our goal was to restore reaching and grasping in spastic paresis of **finger** and hand muscles. To induce smooth movements, controlled repetitive stimulation is necessary. To avoid pain...

...conducting tissue. For this purpose we developed a high power magnetic stimulator, which can be **computer - controlled** in instantaneous intensity (max. 1500 J) and rate (max. 40 s^{sup}-sup 1). By placing...

...figure-of-8 coil over the innervation zone, we can generate movements even of single **fingers**. So far we investigated 6 stroke patients with no remarkable somatosensory deficits suffering from distal...

...of 30 - 50 cycles each of induced extension and also flexion movements of hand and **fingers** the patients could extend the paretic **fingers** with larger displacement amplitude at diminished amounts of spastic flexor activity (mean EMG). Concomittantly, also...

...and faster. The patients reported a longlasting effect (some days) with improvement of grasping and **finger** extension movements. The long duration of the effect following RPMS, reported in all patients, suggests...

...contribute to the improved motor performance. Via lemniscal-thalamic pathways projecting to the parietal and **sensory** motor cortex the increased proprioceptive drive elicited by RPMS could modulate the corticospinal motor command...

20/3,K/3 (Item 3 from file: 73)

DIALOG(R) File 73:EMBASE

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04387111 EMBASE No: 1990275197

A system of personal computer control programs for tapping experiments

Mates J.

Institute of Physiology, Czech. Academy of Sciences, Videnska 1083,CS-142
20 Praha 4 Czechoslovakia

Computer Methods and Programs in Biomedicine (COMPUT. METHODS PROGRAMS
BIOMED.) (Netherlands) 1990, 33/1 (43-48)

CODEN: CMPBE ISSN: 0169-2607

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

A system of personal computer control programs for tapping experiments

...was developed to explore the precision and accuracy of a subject's timing mechanisms in **sensorimotor** behavior. Various rhythmic **patterns** composed of several accentuated and non-accentuated tones which the subject has to follow or to reproduce by **finger** tapping can be designed. All parameters of the stimulus tones, i.e., duration, pitch and...

20/3,K/4 (Item 4 from file: 73)

DIALOG(R) File 73:EMBASE

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04324172 EMBASE No: 1990206728

Simulation of motion on the skin. IV. Responses of Pacinian corpuscle afferents innervating the primate hand to stripe patterns on the OPTACON

Palmer C.I.; Gardner E.P.
Dept. Physiology/Biophysics, New York University, Medical Center-MSB 442,
550 First Avenue, New York, NY 10016 United States
Journal of Neurophysiology (J. NEUROPHYSIOL.) (United States) 1990,
64/1 (236-247)
CODEN: JONEA ISSN: 0022-3077
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...on the skin. IV. Responses of Pacinian corpuscle afferents innervating the primate hand to stripe patterns on the OPTACON

...PC) afferents in the median and ulnar nerves of macaque monkeys, we displayed horizontal bar patterns spaced 1-13 mm apart on a computer-controlled OPTACON stimulator contracting the hand. Two-point resolution was measured by simultaneously pulsing pairs of...

...mm/s. Single-fiber responses are reported from eight physiologically identified PC afferents innervating the fingers and palm in anesthetized monkeys. 2. Pacinian afferents differ in their sensitivity to stripe patterns moved across the hand. Bursting PCs fire bursts of two or three spikes/pulse when...

...poorer spatial resolution than RAs, because of their larger receptive fields and less regular firing patterns. Only two of eight PCs tested demonstrated a pause in activity representing the gap between...

...responses and their tendency to summate adjacent stimuli. 6. Total spike output evoked by stripe patterns moved across PC receptive fields is more than double that of RAs, because of the...

...degrade tactile resolution of stimulus details and mask the otherwise clear spatial resolution of stripe patterns observed in the RA population. The strength of PC responses may be partially responsible for

...

MEDICAL DESCRIPTORS:

*hand; *pacini corpuscle; * sensory nerve; *ulnar nerve

20/3,K/5 (Item 5 from file: 73)

DIALOG(R) File 73:EMBASE
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04135898 EMBASE No: 1990018440

Simulation of motion on the skin. II. Cutaneous mechanoreceptor coding of

the width and texture of bar patterns displaced across the OPTACON

Gardner E.P.; Palmer C.I.

Dept. of Phys. and Biophys., New York Univ. Med. Center, MSB 442, 550 First Avenue, New York, NY 10016 United States

Journal of Neurophysiology (J. NEUROPHYSIOL.) (United States) 1989,
62/6 (1437-1460)

CODEN: JONEA ISSN: 0022-3077

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...motion on the skin. II. Cutaneous mechanoreceptor coding of the width and texture of bar patterns displaced across the OPTACON

...the cluster dominates axonal output by cancellation of signals from other branches. Bar and stripe patterns have been swept across the

finger or palm of the monkey's hand at speeds of 30-120 mm/s with the use of a **computer - controlled** grid of sequentially activated miniature probes (OPTACON stimulator). The dense packing of OPTACON probes permits... ...of PC afferents at different orientations through the skin. Integration of information from moving bar **patterns** has been tested with two protocols. In the variable width protocol, the total number of...

...fewer spikes per pulse than the most effective individual row tested alone. When broad-bar **patterns** are centered over the field, contacting the maximum number of receptors, RAs follow activity in...

...Lack of summation is observed at all pulse frequencies tested (25-100 Hz). Moving bar **patterns** evoke responses as long as at least one row stimulates the receptive field; broader **patterns** evoke longer spike trains whose total number of impulses is proportional to bar width. Widening...

...inputs from multiple probes in their fields, showing the strongest responses when the widest bar **patterns** are centered on the field. PCs show little edge sensitivity; rather they integrate the total...

...row in the pattern as an independent edge. We suggest that the improved responses of **sensory** afferents reflect greater mechanical compliance of the skin to individual probes as the gap size...

20/3,K/6 (Item 1 from file: 155)

DIALOG(R) File 155: MEDLINE(R)

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13663225 PMID: 9376542

Abnormal functional lateralization of the sensorimotor cortex in patients with schizophrenia.

Mattay V S; Callicott J H; Bertolino A; Santha A K; Tallent K A; Goldberg T E; Frank J A; Weinberger D R

Clinical Brain Disorders Branch, NIMH, NIH, NIMH Neuroscience Center at St. Elizabeth's, Washington, DC 20032, USA.

Neuroreport (ENGLAND) Sep 8 1997, 8 (13) p2977-84, ISSN 0959-4965

Journal Code: 9100935

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Abnormal functional lateralization of the sensorimotor cortex in patients with schizophrenia.

Previous neuroimaging studies have suggested that patients with schizophrenia fail to recruit appropriate focal **patterns** of cortical responses to cognitive tasks. We investigated whether patients with schizophrenia show a normal...

... Patients were unable to recruit as focal a response even to a simple, automatic sequential **finger** movement task. They showed greater ipsilateral activation in the primary **sensorimotor** and lateral premotor regions and had a significantly lower laterality quotient than normal subjects. These...

; Adult; Analysis of Variance; Case- Control Studies; Image Processing, Computer -Assisted; Magnetic Resonance Imaging; Motor Cortex--pathology --PA; Psychomotor Performance--physiology--PH; Schizophrenia--pathology--PA

...

?